REPORT TO

SYESUN PTY LTD

ON

DETAILED (STAGE 2) SITE INVESTIGATION

FOR

PROPOSED GARDEN CENTRE REDEVELOPMENT

AT

277 MONA VALE ROAD, TERREY HILLS, NSW

Date: 13 June 2023

Ref: E34278PHrpt2-rev1

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Executive Summary

Syesun Pty Ltd ('the client') commissioned JK Environments (JKE) to undertake a Detailed (Stage 2) Site Investigation (DSI) for the proposed garden centre redevelopment at 277 Mona Vale Road, Terrey Hills, NSW ('the site'). JKE have previously undertaken a Preliminary Site Investigation (PSI) at the site that identified potential contamination at the site. The purpose of the DSI is to better assess site contamination conditions and establish whether remediation is required.

The primary aim of the investigation was to better assess the contamination conditions following the PSI. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of the PSI;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Prepare a conceptual site model (CSM) identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC), based on the PSI;
- Assess the soil, groundwater and hazardous ground gas (HGG) contamination conditions via implementation of a sampling and analysis program;
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint); and
- Assess whether further intrusive investigation and/or remediation is required.

The DSI included a review of the PSI, soil sampling from 30 location, groundwater sampling from three locations and Hazardous Ground Gas (HGG) sampling from two locations.

At the time of the inspection, the majority of site was occupied by a plant nursery, landscape/garden centre and a café.

Fill was encountered at the surface or beneath the pavement in all boreholes, except BH113 and BH116, and extended to depths of approximately 0.2m to 4.5m. The fill typically comprised silty gravelly sand/gravelly silty sand, silty sand and silty clayey sand/silty sandy clay with inclusions of igneous and ironstone gravel, ash, slag and building rubble (brick, concrete, AC, glass and tile fragments). During the PSI, fill was also found to contain organic material.

Natural soil was encountered beneath the fill or beneath the pavement in BH102 to BH104, BH106 to BH107, BH111 to BH114, BH116, BH118 to BH120, TP126 to BH128 and BH130. The natural soil extended to the termination of all of these locations. Siltstone or sandstone bedrock was encountered beneath the fill in BH101 and BH105, and beneath the natural soil in BH101A.

Groundwater monitoring wells were installed in BH101A (MW101A), BH102 (MW102) and BH105 (MW105). Standing Water Levels (SWLs) measured in the monitoring wells installed at the site ranged from 0.53m to 2.76m.

HGG field measurements recorded during borehole/test pit drilling/excavation were as follows:

- Methane concentrations recorded ranged from 0%v/v to 2.4%v/v;
- Carbon dioxide concentrations ranged from 0%v/v to 11.9%v/v;
- Oxygen concentrations ranged from 14%v/v to 21.7%v/v;
- Hydrogen sulphide concentrations recorded were all 0ppm; and,
- Atmospheric pressure) ranged from 991mbar to 1000mbar.

The highest methane and carbon dioxide results were detected in BH101 while drilling at a depth of 3mBGL.

Based on the results of the waste classification assessment, and at the time of reporting, the fill material is classified as General Solid Waste (non-putrescible) containing Special Waste (asbestos). Based on the scope of work undertaken for this assessment, and at the time of reporting, JKE is of the opinion that the natural soil and bedrock at the site is likely to meet the definition of virgin excavated natural material (VENM) for off-site disposal or re-use purposes. Further assessment will be required to confirm this classification following removal of the overlying fill and validation of the AST removal.

All of the soil analysis results were less than the Site Assessment Criteria (SAC), with the exception of asbestos. We note that asbestos was detected at concentrations that exceeded the SAC in fill samples from BH101 and BH128. Asbestos was also detected at concentrations less than the SAC in fill samples from BH104, BH106, BH110 and TP127. The source of the asbestos is considered likely to be the demolition material that was observed throughout the fill.

Concentrations of copper and zinc, and the pH, in groundwater samples exceeded the ecological based SAC. We note that the ecological SAC were adopted as a conservative measure and that these exceedances are considered to present a negligible risk.

Methane and carbon dioxide were encountered both during drilling of BH101 and spot monitoring in MW101. We note that MW101 is located in the north-east corner of the site, outside of the proposed building footprint. The methane and carbon dioxide are considered likely to be associated with organic material in fill.

JKE consider the site can be made suitable for the proposed development via remediation. The following is recommended:

- A Remediation Action Plan (RAP) should be prepared to outline measures to reduce the risks associated with the asbestos in fill at the site. The RAP must also outline the details of additional HGG monitoring at the site and other site management protocols to address the data gaps;
- An Asbestos Management Plan (AMP) is to prepared for the construction phase of the proposed development for the removal of the asbestos waste, as required under the NSW Work Health and Safety Regulation 2017; and
- An AMP is to be prepared for management of asbestos in soil whilst the existing retail premises continue to operate.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of this report.

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Abbreviations

Asbestos Fines/Fibrous Asbestos	**AF/FA**
Ambient Background Concentrations	**ABC**
Added Contaminant Limits	**ACL**
Asbestos Containing Material	**ACM**
Australian Drinking Water Guidelines	**ADWG**
Area of Environmental Concern	**AEC**
Australian Height Datum	**AHD**
Acid Sulfate Soil	**ASS**
Above-Ground Storage Tank	**AST**
Below Ground Level	**BGL**
Benzo(a)pyrene Toxicity Equivalent Factor	**BaP TEQ**
Bureau of Meteorology	**BOM**
Benzene, Toluene, Ethylbenzene, Xylene	**BTEX**
Cation Exchange Capacity	**CEC**
Contaminated Land Management	**CLM**
Contaminant(s) of Potential Concern	**CoPC**
Chain of Custody	**COC**
Conceptual Site Model	**CSM**
Development Application	**DA**
Dial Before You Dig	**DBYD**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Detailed Site Investigation	**DSI**
Ecological Investigation Level	**EIL**
Ecological Screening Level	**ESL**
Environmental Management Plan	**EMP**
Excavated Natural Material	**ENM**
Environment Protection Authority	**EPA**
Environmental Site Assessment	**ESA**
Fibre Cement Fragment(s)	**FCF**
General Approval of Immobilisation	**GAI**
Hazardous Ground Gas	**HGG**
Health Investigation Level	**HILs**
Health Screening Level	**HSL**
Health Screening Level-Site Specific Assessment	**HSL-SSA**
International Organisation of Standardisation	**ISO**
JK Environments	**JKE**
Lab Control Spike	**LCS**
Light Non-Aqueous Phase Liquid	**LNAPL**
Map Grid of Australia	**MGA**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Potential ASS	**PASS**
Polychlorinated Biphenyls	**PCBs**
Per-and Polyfluoroalkyl Substances	**PFAS**
Perfluorooctanoic Acid	**PFOA**
Photo-ionisation Detector	**PID**
Protection of the Environment Operations	**POEO**
Practical Quantitation Limit	**PQL**
Quality Assurance	**QA**

Quality Control	**QC**
Remediation Action Plan	**RAP**
Relative Percentage Difference	**RPD**
Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**
Site Audit Statement	**SAS**
Site Audit Report	**SAR**
Site Specific Assessment	**SSA**
Source, Pathway, Receptor	**SPR**
Specific Contamination Concentration	**SCC**
Standard Penetration Test	**SPT**
Standing Water Level	**SWL**
Trip Blank	**TB**
Toxicity Characteristic Leaching Procedure	**TCLP**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Upper Confidence Limit	**UCL**
United States Environmental Protection Agency	**USEPA**
Underground Storage Tank	**UST**
Virgin Excavated Natural Material	**VENM**
Volatile Organic Compounds	**VOC**
World Health Organisation	**WHO**
Work Health and Safety	**WHS**

Units

Litres	**L**
Metres BGL	**mBGL**
Metres	**m**
Millivolts	**mV**
Millilitres	**ml or mL**
Milliequivalents	**meq**
micro Siemens per Centimetre	**µS/cm**
Micrograms per Litre	**µg/L**
Milligrams per Kilogram	**mg/kg**
Milligrams per Litre	**mg/L**
Parts Per Million	**ppm**
Percentage	**%**
Percentage weight for weight	**%w/w**

1 INTRODUCTION

Syesun Pty Ltd ('the client') commissioned JK Environments (JKE) to undertake a Detailed (Stage 2) Site Investigation (DSI) for the proposed garden centre redevelopment at 277 Mona Vale Road, Terrey Hills, NSW ('the site'). The purpose of the investigation is to better assess site contamination conditions and establish whether remediation is required. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed garden centre redevelopment, with regards to Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021[1] (formerly known as SEPP55).

A geotechnical investigation was undertaken previously to this DSI by JK Geotechnics (JKG). The results of the geotechnical investigation are presented in a separate report (Project Ref: 34278B). This report should be read in conjunction with the JKG report.

JKE has previously undertaken a Preliminary Site Investigation (PSI) at the site. A summary of this information is included in Section 2.

1.1 Proposed Development Details

The site is occupied by a garden centre and is to be redeveloped as a new garden centre. Works will include:

- Demolition of the majority of the buildings and structures across the site, with the exception of the existing garden centre building in the east section of the site, some car park area and the open nursery area at the rear of the building;
- Relatively minor cutting of the site with maximum excavations likely to be less than 2m;
- Construction of a new building along the southern portion of the site that will contain an extension of the garden centre, a café, a fruit shop and other retail space;
- A building is also proposed along the western boundary for landscaping retail, with a landscaping yard between this building and the main garden centre; and
- Additional car parking will be provided along the eastern portion of the southern boundary and the existing parking areas may have the pavement reconstructed.

1.2 Aims and Objectives

The primary aim of the investigation was to better assess the contamination conditions following the PSI. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of the PSI;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Prepare a conceptual site model (CSM) identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC), based on the PSI;
- Assess the soil, groundwater and hazardous ground gas (HGG) contamination conditions via implementation of a sampling and analysis program;

[1] *State Environmental Planning Policy (Resilience and Hazards) 2021* (NSW) (referred to as SEPP Resilience and Hazards 2021)

- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed development (from a contamination viewpoint); and
- Assess whether further intrusive investigation and/or remediation is required.

1.3 Scope of Work

The investigation was undertaken generally in accordance with a JKE proposal (Ref: EP55422PH-rev1) of 12 November 2021 and written acceptance from the client of 18 November 2021. The scope of work included the following:

- Review of site information, including background and site history information from the PSI report;
- Preparation of a CSM;
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment; and
- Preparation of a report including a Tier 1 risk assessment.

The scope of work was undertaken with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)[2], other guidelines made under or with regards to the Contaminated Land Management Act (1997)[3] and SEPP Resilience and Hazards 2021. A list of reference documents/guidelines is included in the appendices.

[2] National Environment Protection Council (NEPC), (2013). *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013).* (referred to as NEPM 2013)

[3] Contaminated Land Management Act 1997 (NSW) (referred to as CLM Act 1997)

2 SITE INFORMATION

2.1 Background

A PSI was previously undertaken by JKE in 2021[4]. The PSI included an assessment of the site history, a walkover site inspection and soil sampling from 10 boreholes.

The PSI identified that the site has historically been used for agricultural and horticultural activities from around the mid-1900s onwards. An above-ground storage tank (AST) was also observed during the site inspection. It was noted that agricultural/horticultural activities are listed in Table 1 of the SEPP55 Planning Guidelines as activities that may cause contamination. This triggered a need for a DSI under the purview of SEPP55 (now SEPP Resilience and Hazards 2021).

The following potential contamination sources/areas of environmental concern (AEC) were identified:

- Fill material;
- The AST;
- Historical agricultural use of the site;
- Pesticides may have been used beneath the buildings and/or around the site; and
- Hazardous building materials from former building and demolition activities. These materials may also be present in the existing buildings/structures on site.

The following was recommended to better assess the risks associated with potential contamination at the site:

- A DSI should be undertaken to better characterise the site contamination conditions and establish whether remediation and/or management is required to render the site suitable for the proposed development; and
- A hazardous building materials survey should be undertaken prior to redevelopment of the buildings. Following removal of any hazardous material in the buildings (and preferably prior to removal any hardstand), an asbestos clearance certificate should be obtained.

Considering the depth of fill encountered in some locations (up to 2.7m deep) and the inclusion of carbonaceous organic matter, roots and timber in the fill, the PSI noted that a potential exists for HGG such as methane and carbon dioxide etc to be present. It was also noted that organic odours were observed during drilling of BH2. An initial assessment of HGG was to be included as part of the DSI.

[4] JKE (2021). *Report to Syesun Pty Ltd on Preliminary (Stage 1) Site Investigation for Proposed Garden Centre Redevelopment at 277 Mona Vale Road, Terrey Hills, NSW.* (Ref: E24278PHrpt, dated 28 October 2021)

2.2 Site Identification

Table 2-1: Site Identification

Current Site Owner (certificate of title):	Syesun Pty Limited
Site Address:	277 Mona Vale Road (also known as 62 Myoora Road), Terrey Hills, NSW
Lot & Deposited Plan:	Lot 4 in DP 737411
Current Land Use:	Garden Centre
Proposed Land Use:	Garden Centre
Local Government Authority:	Northern Beaches Council
Current Zoning:	RU4 Primary Production Small Lots
Site Area (m^2) (approx.):	28,000
RL (AHD in m) (approx.):	200
Geographical Location (decimal degrees) (approx.):	Latitude: -33.686399 Longitude: 151.225561
Site Location Plan:	Figure 1
Sample Location Plan:	Figure 2

2.3 Site Location and Regional Setting

The site is located in a mixed residential and commercial area of Terrey Hills and is bound by Mona Vale Road to the east, Cooyong Road to the north and Myoora Road to the west. The site is located approximately 500m to the west of Kimbriki Resource Recovery Centre (landfill).

2.4 Topography

The site is located towards the crest of a south-east facing hillside that falls towards Deep Creek and eventually Narrabeen Lagoon. The site itself falls to the south-east at approximately 1-3°. Parts of the site appear to have been levelled to account for the slope and accommodate the existing development. The hill becomes markedly steeper on the east side of Mona Vale Road.

2.5 Site Inspection

A walkover inspection of the site was undertaken by JKE on 12 August and again on 30 November 2021. The inspection was limited to accessible areas of the site and immediate surrounds. Internal inspection of buildings was limited to publicly accessible areas.

A summary of the inspection findings is outlined in the following subsections:

2.5.1 Current Site Use and/or Indicators of Former Site Use

At the time of the inspection, the majority of site was occupied by a plant nursery, landscape/garden centre and a café.

2.5.2 Buildings, Structures and Roads

The main retail building, located in the east section of the site, was single storey and of brick construction. A group of three smaller buildings were located south of the main building and included a toilet block, storage shed and cashier. Two portable buildings were located in the centre of the site and were occupied by office space. A large greenhouse was located west of the main building and generally contained potted plants and garden products. Concrete paved footpaths extended through the greenhouse. Two buildings (an existing or former house and a garage) were located in the south-west corner of the site and appeared to include fibre-cement cladding). The cladding on the former garage was damaged.

Asphaltic Concrete (AC) car parks were located along the east and north site boundaries.

2.5.3 Boundary Conditions, Soil Stability and Erosion

The site was fenced on all boundaries with a chain wire fence. Exposed soils were apparent across much of the site surface and no obvious signs of erosion were evident.

2.5.4 Presence of Drums/Chemical Storage and Waste

Apart from the AST (discussed below), no obvious chemical usage was observed. However there was fertilisers, herbicides and pesticides packaged for sale in the main building. Internal access to all of the buildings was not possible and there is likely to be pesticides and/or herbicides stored on the site for use on the site.

2.5.5 Evidence of Cut and Fill

The site appears to have been cut and filled to accommodate the existing development.

2.5.6 Visible or Olfactory Indicators of Contamination (odours, spills etc)

An AST was located in a brick and concrete bund, adjacent to the west end of a row of landscaping supply bays (see Figure 2). The bund was filled with mulch and, although no staining was observed within the bund, the mulch appeared wet in sections. Staining was observed on the ground surface immediately east of the AST. Consultation with the client indicated that the AST was used to store diesel.

2.5.7 Drainage and Services

Surface water would be expected to flow to on-site stormwater pits in the south and east sections of the site.

2.5.8 Sensitive Environments

Sensitive environments such as wetlands, ponds, creeks or extensive areas of natural vegetation were not identified on site or in the immediate surrounds.

2.5.9 Landscaped Areas and Visible Signs of Plant Stress

Native shrubs and trees were present along the east, north and west site boundaries. Some native and exotic plants were located throughout the site associated with the nursery. No obvious signs of plant stress or dieback were observed.

2.6 Surrounding Land Use

During the site inspection, JKE observed the following land uses in the immediate surrounds:

- North – Cooyong Road, with a residential area beyond that typically included single and double storey brick houses;
- South – a mixed rural and commercial area that included some horticulture, some rural-retail including a mower shop, horse equipment shop and café;
- East – Mona Vale Road, with a vegetation corridor beyond and Kimbriki Recycling Centre; and
- West – Myoora Road, with Terrey Hills Public School beyond.

JKE did not observe any land uses in the immediate surrounds that were identified as potential contamination sources for the site.

2.7 Underground Services

The 'Dial Before You Dig' (DBYD) plans were reviewed for the investigation in order to establish whether any major underground services exist at the site or in the immediate vicinity that could act as a preferential pathway for contamination migration. Major services were not identified that would be expected to act as preferential pathways for contamination migration.

2.8 Section 10.7 Planning Certificate

The section 10.7 (2 and 5) planning certificates were reviewed for the PSI. A summary of the relevant information is outlined below:

- The land is not deemed to be: significantly contaminated; subject to a management order; subject of an approved voluntary management proposal; or subject to an on-going management order under the provisions of the CLM Act 1997;
- The land is not the subject of a Site Audit Statement (SAS); and
- The land does not contain an item of environmental heritage.

3 GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

Regional geological information sourced from a Lotsearch *Environmental Risk and Planning Report* was reviewed for the PSI. The report indicated that the site is underlain by Hawkesbury Sandstone, which typically consists of medium to coarse grained quartz sandstone with minor shale and laminite lenses.

3.2 Acid Sulfate Soil (ASS) Risk and Planning

The site is not located in an ASS risk area according to the risk maps prepared by the Department of Land and Water Conservation.

3.3 Hydrogeology

Hydrogeological information presented in the Lotsearch report indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes porous, extensive aquifers of low to moderate productivity. There was several registered bores within the report buffer of 2,000m. In summary:

- The nearest registered bore was located approximately 160m to the north-east of the site. This was utilised for domestic purposes;
- The majority of the bores were registered for domestic purposes and were located west of the site;
- The nearest down-gradient bore (east or south-east) from the site was located over 650m from the site; and
- The drillers log information from the closest registered bores typically identified fill and/or clay soil to depths of 0.4-3.3m, underlain by sandstone bedrock. Standing water levels (SWLs) in the bores ranged from 16mBGL to 112mBGL.

The PSI indicated that the subsurface conditions at the site consist of residual soils (anticipated to be of relatively low permeability) overlying shallow bedrock. The potential for viable groundwater abstraction and use of groundwater under these conditions is considered to be low and only available using very deep wells. There is a reticulated water supply in the area and consumption of groundwater is not expected to occur. Use of groundwater is not proposed as part of the development.

Boreholes drilled for the PSI identified groundwater seepage during drilling at depths ranging from approximately 1.3mBGL to 6.5mBGL. No long-term groundwater monitoring was undertaken. Considering the local topography and surrounding land features, JKE anticipate groundwater to flow towards the south-east.

3.4 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is Deep Creek located approximately 1,800m to the south-east of the site. This is down-gradient from site, however, due to the distance from the site, is unlikely to be a potential receptor.

4 CONCEPTUAL SITE MODEL

NEPM (2013) defines a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM for the site is presented in the following sub-sections and is based on the site information (including the site inspection information) and the review of site history information. Reference should also be made to the figures attached in the appendices.

A review of the CSM in relation to source, pathway and receptor (SPR) linkages has been undertaken as part of the Tier 1 risk assessment process, as outlined in Section 9.

4.1 Potential Contamination Sources/AEC and CoPC

The potential contamination sources/AEC and CoPC are presented in the following table:

Table 4-1: Potential (and/or known) Contamination Sources/AEC and Contaminants of Potential Concern

Source / AEC	CoPC
Fill material – The site appears to have been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated. Fill can also become contaminated in situations where former buildings are demolished and where soils are moved around the site during cut/fill earthworks. Fill material was encountered during the PSI that extended to depths of approximately 0.3m to 2.7m. Preliminary sampling and analysis of the fill during the PSI did not identify contamination, however precursors for asbestos (in the form of building/demolition rubble) were identified. There is a potential for HGG, primarily including methane and carbon dioxide, to be associated with the deep fill where organic materials are present.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos. HGG: primarily methane and carbon dioxide.
Fuel storage – One AST was identified at the site (see Figure 2). The AST was located in a concrete bund, however staining was observed on the ground surface immediately east.	Lead, TRH, BTEX and PAHs
Historical agricultural use – The site appears to have been used for market garden purposes and as a commercial nursery. This could have resulted in contamination across the site via use of machinery, application of pesticides/herbicides and building/ demolition of various structures. Irrigation pipes made from asbestos cement may also be associated with this AEC.	Heavy metals, TRH, PAHs, OCPs, OPPs, PCBs, herbicides, insecticides and asbestos. JKE note that OCPs only became commercially available in the 1940s. Prior to this time pesticides were predominantly heavy metal compounds.
Use of pesticides – Pesticides may have been used beneath the buildings and/or around the site for general	Heavy metals and OCPs

Source / AEC	CoPC
pest control purposes (including termite applications during construction etc).	
Hazardous Building Material – Hazardous building materials may be present as a result of former building and demolition activities. These materials may also be present in the existing buildings/ structures on site, or within fill used during earthworks.	Asbestos, lead and PCBs

4.2 Mechanism for Contamination, Affected Media, Receptors and Exposure Pathways

The mechanisms for contamination, affected media, receptors and exposure pathways relevant to the potential contamination sources/AEC are outlined in the following CSM table:

Table 4-2: CSM

Potential mechanism for contamination	The potential mechanisms for contamination are most likely to include 'top-down' impacts and spills. Subsurface release mechanisms also apply to HGG, or in the event that other buried industrial infrastructure is present (e.g. underground tank).
Affected media	Soil, groundwater and HGG have been identified as potentially affected media. It is acknowledged that some of the soil CoPC are volatile. Consideration of soil vapour impacts would need to occur after evaluation of the soil/groundwater data to establish whether soil vapour is a potentially affected medium.
Receptor identification	Human receptors include site occupants/users (including primarily adults), construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users, with the most sensitive receptors being children in a residential or primary school land use scenario. Ecological receptors include terrestrial organisms and plants within unpaved areas (including the proposed landscaped areas).
Potential exposure pathways	Potential exposure pathways relevant to the human receptors include ingestion, dermal absorption and inhalation of dust (all contaminants) and vapours (volatile TRH, naphthalene and BTEX). The potential for exposure would typically be associated with the construction and excavation works, and future use of the site. Potential exposure pathways for ecological receptors include primary/direct contact and ingestion. Inhalation of HGG can cause human health effects ranging from nausea to asphyxiation. HGG such as methane can be flammable/explosive under certain atmospheric conditions, with the introduction of an ignition source. The potential for exposure would typically be associated with the construction and excavation works, and future use of the site. Exposure during future site use could occur via direct contact with soil in unpaved areas such as gardens, inhalation of airborne asbestos fibres during soil disturbance, or inhalation of vapours within enclosed spaces such as buildings.
Potential exposure mechanisms	The following have been identified as potential exposure mechanisms for site contamination:

	• Vapour/HGG intrusion or accumulation into semi-enclosed spaces such as trenches or excavations, or enclosed spaces such as the building (either from HGG formed by the degradation of waste, soil contamination or volatilisation of contaminants from groundwater); • Contact (dermal, ingestion or inhalation) with exposed soils during construction, or during future site use in landscaped areas and/or unpaved areas; • Contact with groundwater during construction or in a recreational scenario should groundwater migrate to the nearest receiving water bodies.
Presence of preferential pathways for contaminant movement	No obvious preferential pathways for contamination were observed at the site.

5 SAMPLING, ANALYSIS AND QUALITY PLAN

5.1 Data Quality Objectives (DQO)

Data Quality Objectives (DQOs) were developed to define the type and quality of data required to achieve the project objectives outlined in Section 1.2. The DQOs were prepared with reference to the process outlined in Schedule B2 of NEPM (2013). The seven-step DQO approach for this project is outlined in the following sub-sections.

The DQO process is validated in part by the Data Quality Assurance/Quality Control (QA/QC) Evaluation. The Data (QA/QC) Evaluation is summarised in Section 7.1 and the detailed evaluation is provided in the appendices.

5.1.1 Step 1 - State the Problem

The CSM identified potential sources of contamination/AEC at the site that may pose a risk to human health and the environment. The PSI did not identify any soil contamination that was assessed to pose a risk to on-site receptors and/or in relation to the proposed land use. However, the PSI identified potential contamination sources that were triggers for a DSI and an initial screening for HGG.

Investigation data is required to assess the contamination status of the site, assess the risks posed by the contaminants in the context of the proposed development/intended land use, and assess whether remediation is required. This information will be considered by the consent authority in exercising its planning functions in relation to the development proposal.

A waste classification is required prior to off-site disposal of excavated soil/bedrock.

The DQOs were developed by the author of this report and checked by the reviewer. Both the author and reviewer were joint decision-makers in relation to Step 2 of the DQO process.

The investigation was constrained by access limitations associated with the existing structures on site.

5.1.2 Step 2 - Identify the Decisions of the Study

The objectives of the investigation are outlined in Section 1.2. The decisions to be made reflect these objectives and are as follows:

- Are any results above the SAC?
- Did the preliminary HGG screening identify methane or carbon dioxide concentrations of concern?
- Do potential risks associated with contamination exist, and if so, what are they?
- Is remediation required?
- Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

5.1.3 Step 3 - Identify Information Inputs

The primary information inputs required to address the decisions outlined in Step 2 include the following:

- Existing relevant environmental data from previous reports;
- Site information, including site observations and site history documentation;
- Sampling of potentially affected media, including soil and groundwater, and field screening for HGG;
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining, HGG concentrations during the field screening and groundwater physiochemical parameters;
- Laboratory analysis of soils and groundwater for the CoPC identified in the CSM; and
- Field and laboratory QA/QC data.

5.1.4 Step 4 - Define the Study Boundary

The sampling will be confined to the site boundaries as shown in Figure 2 and will be limited vertically to a depth of 6m for groundwater investigation and into the natural soil (or prior refusal) for soil investigation. These are the spatial boundaries. The sampling was completed between 30 November and 8 December 2021 (temporal boundary). The assessment of potential risk to adjacent land users has been made based on data collected within the site boundary.

The HGG screening was limited to screening of the boreholes during drilling, plus one round of HGG monitoring from the nominated gas wells. Long-term monitoring of HGG or groundwater did not occur within the scope of the DSI.

Sampling was not undertaken within the existing building footprints due to access constraints.

5.1.5 Step 5 - Develop an Analytical Approach (or Decision Rule)

5.1.5.1 Tier 1 Screening Criteria

The laboratory data will be assessed against relevant Tier 1 screening criteria (referred to as SAC), as outlined in Section 6. Exceedances of the SAC do not necessarily indicate a requirement for remediation or a risk to human health and/or the environment. Exceedances are considered in the context of the CSM and valid SPR-linkages.

For this investigation, the individual results have been assessed as either above or below the SAC. Statistical evaluation of the dataset via calculation of mean values and/or 95% upper confidence limit (UCL) values has not been undertaken due to the spatial distribution of the data (i.e. non-probabilistic sampling plan).

5.1.5.2 Field and Laboratory QA/QC

Field QA/QC included analysis of inter-laboratory duplicates, intra-laboratory duplicates, trip spike, trip blank and rinsate samples. Further details regarding the sampling and analysis undertaken, and the acceptable limits adopted, is provided in the Data Quality (QA/QC) Evaluation in the appendices.

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the attached laboratory reports. These criteria were developed and implemented in accordance with the laboratory's National Association of Testing Authorities, Australia (NATA) accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

In the event that acceptable limits are not met by the laboratory analysis, other lines of evidence are reviewed (e.g. field observations of samples, preservation, handling etc) and, where required, consultation with the laboratory is undertaken in an effort to establish the cause of the non-conformance. Where uncertainty exists, JKE typically adopt the most conservative concentration reported (or in some cases, consider the data from the affected sample as an estimate).

5.1.5.3 Appropriateness of Practical Quantitation Limits (PQLs)

The PQLs of the analytical methods are considered in relation to the SAC to confirm that the PQLs are less than the SAC. In cases where the PQLs are greater than the SAC, a discussion of this is provided.

5.1.6 Step 6 – Specify Limits on Decision Errors

To limit the potential for decision errors, a range of quality assurance processes are adopted. A quantitative assessment of the potential for false positives and false negatives in the analytical results is undertaken with reference to Schedule B(3) of NEPM (2013) using the data quality assurance information collected.

Decision errors can be controlled through the use of hypothesis testing. The test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false. The null hypothesis is an assumption that is assumed to be true in the absence of contrary evidence. For this investigation, the null hypothesis has been adopted which is that, there is considered to be a complete SPR linkage for the CoPC identified in the CSM unless this linkage can be proven not to (or unlikely to) exist. The null hypothesis has been adopted for this investigation.

Quantitative limits on decision errors were not established as the sample plan was not probabilistic.

5.1.7 Step 7 - Optimise the Design for Obtaining Data

The most resource-effective design will be used in an optimum manner to achieve the investigation objectives. Adjustment of the investigation design can occur following consultation or feedback from project stakeholders. For this investigation, the design was optimised via consideration of the various lines of evidence used to select the sample locations, the media being sampled, and also by the way in which the data were collected.

The sampling plan and methodology are outlined in the following sub-sections.

5.2 Soil Sampling Plan and Methodology

The soil sampling plan and methodology adopted for this investigation is outlined in the table below:

Table 5-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	The PSI included soil sampling from 10 boreholes (BH1 to BH10) and did not include asbestos quantification. The DSI included soil sampling from an additional 30 boreholes/test pits (101 to 130, with locations TP126 and TP127 as test pits) and included asbestos quantification. Based on the site area (28,000m^2), this number of locations corresponded to a sampling density of approximately one sample per 930m^2. The sampling plan was not designed to meet the minimum sampling density for hotspot identification, as outlined in the NSW EPA Contaminated Sites Sampling Design Guidelines (1995)[5] (applicable at the time of the investigation) as the sampling plan was non-probabilistic due to access constraints. It is noted however that the guidelines require 40 locations for sites up to 30,000m^2.
Sampling Plan	The sampling locations were placed on a judgemental sampling plan, with locations broadly positioned for site coverage, taking into consideration areas that were not easily accessible. Two locations (BH102 and BH115) were positioned in the immediate vicinity of the AST. This sampling plan was considered suitable to make an assessment of potential risks associated with the AEC and CoPC identified in the CSM, and assess whether further investigation is warranted.
Set-out and Sampling Equipment	Sampling locations were set out using a tape measure. In-situ sampling locations were checked for underground services by an external contractor prior to sampling. Samples from BH101 to BH108 were collected using a drill rig equipped with spiral flight augers (150mm diameter). Soil samples were obtained from a Standard Penetration Test (SPT) split-spoon sampler, and/or directly from the auger. Samples from the remaining locations were collected using a hand auger and/or shovel.
Sample Collection and Field QA/QC	Soil samples were obtained on 30 November and 1 December 2021 in accordance with our standard field procedures. Soil samples were collected from the fill and natural profiles based on field observations. The sample depths are shown on the logs attached in the appendices. Samples were placed in glass jars with plastic caps and teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis. The field splitting procedure included alternately filling the sampling containers to obtain a representative split sample.
Field Screening	A portable Photoionisation Detector (PID) fitted with a 10.6mV lamp was used to screen the samples for the presence of volatile organic compounds (VOCs). PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases. PID calibration records are maintained on file by JKE.

[5] NSW EPA, (1995), *Contaminated Sites Sampling Design Guidelines.* (referred to as EPA Sampling Design Guidelines 1995)

Aspect	Input
	The field screening for asbestos quantification included the following: • A representative bulk sample was collected from fill at 1m intervals, or from each distinct fill profile. The quantity of material for each sample varied based on whatever return could be achieved using the auger. The bulk sample intervals are shown on the attached borehole/test pit logs; • Each sample was weighed using an electronic scale; • Each bulk sample was passed through a sieve with a 7.1mm aperture and inspected for the presence of fibre cement; • The condition of fibre cement or any other suspected asbestos materials was noted on the field records; and • If observed, any fragments of fibre cement in the bulk sample were collected, placed in a zip-lock bag and assigned a unique identifier. Calculations for asbestos content were undertaken based on the requirements outlined in Schedule B1 of NEPM (2013), as summarised in Section 6.1. A calibration/check of the accuracy of the scale used for weighing the fibre cement fragments was undertaken using a set of calibration weights. Calibration/check records are maintained on file by JKE. The scale used to weigh the 10L samples was not calibrated, however this is not considered significant as this method of providing a weight for the bulk sample is considered to be considerably more accurate than applying a nominal soil density conversion. HGG primarily including methane (CH4) and carbon dioxide (CO2) were monitored during drilling/excavation at all locations, using a calibrated GFM landfill gas meter. The meter was held over the open boreholes/test pits at regular intervals during drilling. The HGG drilling field sheets are attached in the appendices.
Decontami-nation and Sample Preservation	Sampling personnel used disposable nitrile gloves during sampling activities. Re-usable sampling equipment was decontaminated using Decon and potable water. Soil samples were preserved by immediate storage in an insulated sample container with ice. On completion of the fieldwork, the samples were stored temporarily in fridges in the JKE warehouse before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody (COC) procedures.

5.3 Groundwater Sampling Plan and Methodology

The groundwater sampling plan and methodology is outlined in the table below:

Table 5-2: Groundwater Sampling Plan and Methodology

Aspect	Input
Sampling Plan	Groundwater monitoring wells were installed in BH101A (MW101A) which was a purpose-drilled hole at location 101 for installation of the groundwater monitoring well, BH102 (MW102) and BH105 (MW105). MW101 and MW105 were positioned to gain a snap-shot of the groundwater conditions. MW102 was positioned immediately down gradient from the AST, within the area of staining. Considering the topography and the location of the nearest down-gradient water body, MW105 was considered to be in the up-gradient area of the site and would be expected to provide an indication of groundwater flowing onto (beneath) the site from the west. MW101 was considered to be in the intermediate to down-gradient area of the site and would be

Aspect	Input
	expected to provide an indication of groundwater flowing across (beneath) the site and beyond the down-gradient site boundary.
Monitoring Well Installation Procedure	The monitoring well construction details are documented on the appropriate borehole logs attached in the appendices. The monitoring wells were installed to a depth of approximately 6m below ground level. The wells were generally constructed as follows: • 50mm diameter Class 18 PVC (machine slotted screen) was installed in the lower section of the well to intersect groundwater; • 50mm diameter Class 18 PVC casing was installed in the upper section of the well (screw fixed); • A 2mm sand filter pack was used around the screen section for groundwater infiltration; • A hydrated bentonite seal/plug was used on top of the sand pack to seal the well; and • A gatic cover was installed at the surface with a concrete plug to limit the inflow of surface water. The monitoring well installation, including the screen lengths, were considered suitable for assessment of general groundwater quality with regards to Table 5 in Schedule B2 of NEPM 2013.
Monitoring Well Development	The monitoring wells were developed on 2 December 2021 using a submersible electrical pump. Due to the hydrogeological conditions, groundwater inflow into MW101 was relatively low, therefore MW101 was pumped until it was effectively dry. MW102 and MW105 were developed until steady state conditions were achieved. Steady state conditions were considered to have been achieved when the difference in the pH measurements was less than 0.2 units, the difference in conductivity was less than 10%, and when the SWL was not in drawdown. The field monitoring records and calibration data are attached in the appendices.
Groundwater Sampling	The monitoring wells were allowed to recharge for approximately six days after development. Groundwater samples were obtained on 8 December 2021. Prior to sampling, the monitoring wells were checked for the presence of Light Non-Aqueous Phase Liquids (LNAPLs) using an inter-phase probe electronic dip meter. The monitoring well head space was checked for VOCs using a calibrated PID unit. The samples were obtained using a peristaltic pump. During sampling, the following parameters were monitored using calibrated field instruments: • Standing water level (SWL) using an electronic dip meter; and • pH, temperature, electrical conductivity (EC), dissolved oxygen (DO) and redox potential (Eh) using a YSI Multi-probe water quality meter. Steady state conditions were considered to have been achieved when the difference in the pH measurements was less than 0.2 units, the difference in conductivity was less than 10%, and when the SWL was not in drawdown. Groundwater samples were obtained directly from the single use PVC tubing and placed in the sample containers. Duplicate samples were obtained by alternate filling of sample containers. This technique was adopted to minimise disturbance of the samples and loss of volatile contaminants associated with mixing of liquids in secondary containers, etc. Groundwater removed from the wells during development and sampling was transported to JKE in jerry cans and stored in holding drums prior to collection by a licensed waste water contractor for off-site disposal.

Aspect	Input
	The field monitoring record and calibration data are attached in the appendices.
Decontaminant and Sample Preservation	During development, the pump was flushed between monitoring wells with potable water (single-use tubing was used for each well). The pump tubing was discarded after each sampling event and replaced therefore no decontamination procedure was considered necessary. The samples were preserved with reference to the analytical requirements and placed in an insulated container with ice or ice bricks. On completion of the fieldwork, the samples were temporarily stored in a fridge at the JKE office, before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard COC procedures.

5.4 HGG Sampling Plan and Methodology

The HGG sampling plan and methodology is outlined in the table below:

Table 5-3: HGG Sampling Plan and Methodology

Aspect	Input
Sampling Plan	HGG monitoring wells were installed in BH101 (MW101) and BH106 (MW106). The wells were positioned to gain a snap-shot of the HGG conditions and were installed where deep fill was encountered and/or where detections of methane were encountered during the borehole field screening.
Monitoring Well Installation Procedure	The monitoring well construction details are documented on the appropriate borehole logs attached in the appendices. The monitoring wells were installed to depths of approximately 1.5m to 4.5mBGL and were generally constructed as follows: • 50mm diameter Class 18 PVC (machine slotted screen) was installed in the lower section of the well and up through the fill profiles (as the fill profiles were the waste mass that was expected to be the source of HGG); • 50mm diameter Class 18 PVC casing was installed in the upper section of the well (screw fixed) to a depth of approximately 0.5m; • A 2mm sand filter pack was used around the screen section to allow HGG ingress; • A hydrated bentonite seal/plug was used on top of the sand pack to seal the well; and • A gatic cover was installed at the surface with a concrete plug to limit the inflow of surface water. A quick fix gas cap was placed on each well. Screening for HGG was undertaken during drilling/excavation of boreholes/test pits at the site using a hand-held landfill gas analyser (GFM436). The HGG concentrations were recorded at regular depth intervals during drilling by placing the gas sampling tubing at the opening of the borehole/test pit after auger extraction. HGG field data recorded during drilling/excavation are attached in Appendix H. The GFM436 is calibrated to measure a number of HGGs including: methane (CH_4), carbon dioxide (CO_2), oxygen (O_2), hydrogen sulfide (H_2S), and carbon monoxide (CO). The GFM436 also measures flow rate (L/hr).
HGG Spot Monitoring	HGG spot monitoring was undertaken on 8 December 2021. At each monitoring well, following connection of the quick connect fittings to the landfill gas cap, HGG and flow measurements were recorded every 30 seconds over at least a 5-minute monitoring period. The field HGG monitoring field sheet records are attached in the appendices.

5.4.1 Laboratory Analysis

Samples were analysed by an appropriate, NATA Accredited laboratory using the analytical methods detailed in Schedule B(3) of NEPM 2013. Reference should be made to the laboratory reports attached in the appendices for further details.

Table 5-4: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicates, trip blanks, trip spikes and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	284547, 284547-A and 285130
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	29239 and 29114

6 SITE ASSESSMENT CRITERIA (SAC)

The SAC were derived from the NEPM 2013 and other guidelines as discussed in the following sub-sections. The guideline values for individual contaminants are presented in the attached report tables and further explanation of the various criteria adopted is provided in the appendices.

6.1 Soil

Soil data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013) as outlined below.

6.1.1 Human Health

- Health Investigation Levels (HILs) for a 'commercial/industrial' exposure scenario (HIL-D);
- The laboratory detection limit was used as preliminary screening criteria for phenoxy acid herbicides, carbamates and synthetic pyrethroids;
- Health Screening Levels (HSLs) for a 'commercial/industrial' exposure scenario (HSL-D). HSLs were calculated based on conservative assumptions including a 'sand' type and a depth interval of 0m to 1m;
- HSLs for direct contact presented in the CRC Care Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)[6]; and
- Asbestos was assessed against the HSL-D criteria. A summary of the asbestos criteria is provided in the table below:

Table 6-1: Details for Asbestos SAC

Guideline	Applicability
Asbestos in Soil	The HSL-D criteria were adopted for the assessment of asbestos in soil. The SAC adopted for asbestos were derived from the NEPM 2013 and are based on the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021)[7]. The SAC include the following: • No visible asbestos at the surface/in the top 10cm of soil; • <0.05% w/w bonded asbestos containing material (ACM) in soil; and • <0.001% w/w asbestos fines/fibrous asbestos (AF/FA) in soil. Concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013): $$\text{\% w/w asbestos in soil} = \frac{\text{\% asbestos content x bonded ACM (kg)}}{\text{Soil volume (L) x soil density (kg/L)}}$$ However, we are of the opinion that the actual soil volume in a 10L/bulk sample bucket varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed using electronic scales and the above equation was adjusted as follows (we note that the units have also converted to grams):

[6] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care), (2011). Technical Report No. 10 - *Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document*

[7] Western Australian (WA) Department of Health (DoH), (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. (referred to as WA DoH 2021)

Guideline	Applicability
	% w/w asbestos in soil = $\frac{\text{**% asbestos content x bonded ACM (g)**}}{\text{Soil weight (g)}}$

6.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for a 'commercial/industrial' exposure scenario. These have only been applied to the top 2m of soil as outlined in NEPM (2013). The criterion for benzo(a)pyrene has been increased from the value presented in NEPM (2013) based on the Canadian Soil Quality Guidelines[8];
- ESLs were adopted based on the soil type;
- EILs for selected metals were calculated by adding the added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013) to the published ambient background concentration (ABC) values presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)[3]. The ACL for selected metals were calculated using site specific soil parameters for pH, cation exchange capacity and clay content for the BH101 (0.07-0.2m), BH105 (0-0.1m), BH110 (0.09-0.4m), BH111 (0.05-0.4m) and BH112 (0.08-0.3m) samples. The most conservative ACL criteria in Schedule B(1) of NEPM (2013) were adopted for the remaining samples. This method is considered to be adequate for the Tier 1 screening.

6.1.3 Management Limits for Petroleum Hydrocarbons

Management limits for petroleum hydrocarbons (as presented in Schedule B1 of NEPM 2013) were considered.

6.1.4 Waste Classification

Data for the waste classification assessment were assessed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (2014)[9] as outlined in the following table:

Table 6-2: Waste Categories

Category	Description
General Solid Waste (non-putrescible)	• If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as general solid waste; and • If TCLP ≤ TCLP1 and SCC ≤ SCC1 then treat as general solid waste.
Restricted Solid Waste (non-putrescible)	• If SCC ≤ CT2 then TCLP not needed to classify the soil as restricted solid waste; and • If TCLP ≤ TCLP2 and SCC ≤ SCC2 then treat as restricted solid waste.
Hazardous Waste	• If SCC > CT2 then TCLP not needed to classify the soil as hazardous waste; and

[8] Canadian Council of Ministers of the Environment, (1999). *Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)* (referred to as the Canadian Soil Quality Guidelines)

[3] Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4*. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

[9] NSW EPA, (2014). *Waste Classification Guidelines, Part 1: Classifying Waste.* (referred to as Waste Classification Guidelines 2014)

Category	Description
	• If TCLP > TCLP2 and/or SCC > SCC2 then treat as hazardous waste.
Virgin Excavated Natural Material (VENM)	Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following: • That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities; • That does not contain sulfidic ores or other waste; and • Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

6.2 Groundwater

Groundwater data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013), following an assessment of environmental values in accordance with the Guidelines for the Assessment and Management of Groundwater Contamination (2007)[10]. Environmental values for this investigation include human-health risks in non-use scenarios. Aquatic ecosystems and human uses have also been considered for completeness and for screening purposes, despite the nearest down-gradient water body (and it's ecology and/or recreational water users) not being receptors of concern.

6.2.1 Human Health

- The NEPM (2013) HSLs were not applicable for this project as the groundwater was recorded at depths shallower than 2m. On this basis, JKE has undertaken a site-specific assessment (SSA) for the Tier 1 screening of human health risks posed by volatile contaminants in groundwater. The assessment included selection of alternative Tier 1 criteria that were considered suitably protective of human health. These criteria are based on drinking water guidelines and have been referred to as HSL-SSA. The criteria were based on the following (as shown in the attached report tables):
    - Australian Drinking Water Guidelines 2011 (updated 2021)[11] for BTEX compounds and selected VOCs;
    - World Health Organisation (WHO) document titled Petroleum Products in Drinking-water, Background document for the development of WHO Guidelines for Drinking Water Quality (2008)[12] for petroleum hydrocarbons. We have conservatively adopted the value of 100µg/L for TRH F1 and F2;
    - USEPA Region 9 screening levels for naphthalene (threshold value for tap water); and
    - The use of the laboratory PQLs for other contaminants where there were no Australian guidelines.
- The ADWG 2011 were multiplied by a factor of 10 to assess potential risks associated with incidental/recreational-type exposure to groundwater (e.g. within down-gradient water bodies). These have been deemed as 'recreational' SAC.

[10] NSW Department of Environment and Conservation, (2007). *Guidelines for the Assessment and Management of Groundwater Contamination.*

[11] National Health and Medical Research Council (NHMRC), (2021). *National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011* (referred to as ADWG 2011)

[12] World Health Organisation (WHO), (2008). *Petroleum Products in Drinking-water, Background document for the development of WHO Guidelines for Drinking Water Quality* (referred to as WHO 2008)

6.2.2 Environment (Ecological - aquatic ecosystems)

Groundwater Investigation Levels (GILs) for 95% protection of freshwater species were adopted based on the Default Guideline Values in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2018)[13]. The 99% trigger values were adopted where required to account for bioaccumulation. Low and moderate reliability trigger values were also adopted for some contaminants where high-reliability trigger values don't exist.

6.3 Hazardous Ground Gases

HGG methane and carbon dioxide data were compared against the Level 2 risk analysis and assessment SAC outlined in the NSW EPA Assessment and management of hazardous ground gases (2020)[14]. The Level 2 risk-based assessment approach includes calculation of Gas Screening Value (GSV) for each monitoring well and each monitoring round for methane and carbon dioxide, in addition to calculation of a GSV for methane and carbon dioxide for the site, based on the worst-case concentrations and flows recorded across all monitoring wells.

The GSV (L/hr) is calculated by multiplying the maximum borehole flow rate (L/hr) and the maximum methane gas concentration (%v/v). For example, if data from the site indicates a flow rate of 3.5L/hr and a maximum methane concentration of 20%v/v, the site would have a methane GSV of 0.7L/hr (20/100 x 3.5).

The calculated GSV is then to be assessed against the Modified Wilson and Card Classification (Table 7: NSW EPA HGG 2020 guidelines) and a Characteristic Gas Situation (CS) value determined for the site based on the limiting borehole gas volumetric flow for methane and carbon dioxide. The Modified Wilson and Card classification table is represented below:

Table 6-3: Characteristic Gas Situations (Modified Wilson and Card Classification)

GSV Threshold (L/hr)	CS	Risk Classification	Additional Factors	Typical Sources
<0.07	1	Very Low	Typically, methane <1% or carbon dioxide <5%; otherwise consider increase to CS 2	Natural soils with low organic content. Typical fill.
<0.7	2	Low	Flow rate not exceed 70 L/hr, otherwise consider increase to CS 3	Natural soils with high organic content. Recent deep fill.
<3.5	3	Moderate		Old inert waste landfill. Flooded mine workings.

[13] Australian and New Zealand Governments (ANZG), (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality.* Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia (referred to as ANZG 2018)

[14] NSW EPA (2020). *Contaminated Land Guidelines for the Assessment and Management of Hazardous Ground Gases* (referred to as NSW EPA HGG 2020)

GSV Threshold (L/hr)	CS	Risk Classification	Additional Factors	Typical Sources
<15	4	Moderate to High	Consider need for Level 3 risk assessment	Mine workings susceptible to flooding. Closed putrescible waste landfill.
<70	5	High	Level 3 risk assessment required	Shallow, unflooded abandoned mine workings.
>70	6	Very High	Level 3 risk assessment required	Recently used putrescible landfill.

7 RESULTS

7.1 Summary of Data (QA/QC) Evaluation

The data evaluation is presented in the appendices. In summary, JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

7.2 Subsurface Conditions

A summary of the subsurface conditions encountered during the investigation is presented in the following table. Reference should be made to the borehole/testpit logs attached in the appendices for further details.

Table 7-1: Summary of Subsurface Conditions

Profile	Description
Pavement	Asphaltic Concrete (AC) or concrete pavement, approximately 70mm to 270mm thick, was encountered at the surface in BH101 and BH107 to BH119.
Fill	Fill was encountered at the surface or beneath the pavement in all boreholes, except BH113 and BH116, and extended to depths of approximately 0.2m to 4.5m. BH109, BH110, BH115, BH117, BH121 to BH125 and BH129 were terminated in the fill at a maximum depth of approximately 1.8m. The fill typically comprised silty gravelly sand/gravelly silty sand, silty sand and silty clayey sand/silty sandy clay with inclusions of igneous and ironstone gravel, ash, slag and building rubble (brick, concrete, AC, glass and tile fragments). It was noted that the fill in BH101 was significantly deeper than the fill in BH101A. The material appeared similar with the exception of the foreign material inclusions in BH101, which indicated the natural soil at this location may have been excavated and then reinstated or, alternatively, may indicate deeper fill in BH101A.
Natural Soil	Sandy clay, silty clay, silty clayey sand or silty sand was encountered beneath the fill or beneath the pavement in BH102 to BH104, BH106 to BH107, BH111 to BH114, BH116, BH118 to BH120, TP126 to BH128 and BH130. The natural soil extended to the termination of all of these locations. That natural soil was typically grey or orange-brown and contained traces of ironstone gravel.
Bedrock	Siltstone or sandstone bedrock was encountered beneath the fill in BH101 and BH105, and beneath the natural soil in BH101A. The bedrock extended to the termination of these boreholes at a maximum depth of approximately 6m. The siltstone was typically grey with ironstone banding and the sandstone was typically yellow-brown or orange-brown with ironstone banding.
Groundwater	Groundwater seepage was not encountered in the boreholes/test pits during drilling. A SWL of 4.8m and 1.2m was recorded in BH105 and BH110 respectively on completion of drilling. All remaining boreholes/test pits remained dry on completion of drilling and a short time after. Groundwater monitoring wells were installed in BH101A (MW101A), BH102 (MW102) and BH105 (MW105). An organic odour was observed during development of MW101A, however, was not observed during sampling.

7.3 Field Screening

A summary of the field screening results is presented in the following table:

Table 7-2: Summary of Field Screening

Aspect	Details
PID Screening of Soil Samples for VOCs	PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. All soil results were 1ppm or less isobutylene equivalents and groundwater monitoring wells results were 2ppm or less which generally indicates a lack of PID detectable VOCs.
Bulk Screening for Asbestos	The bulk field screening results are summarised in the attached report tables. All of the results were below the SAC. There was no visible ACM or other suspected asbestos materials in any of the bulk samples.
Groundwater Depth & Flow	All of the boreholes/test pits were dry during and a short time after completion of drilling. Groundwater monitoring wells were installed in BH101A (MW101A), BH102 (MW102) and BH105 (MW105). SWLs measured in the monitoring wells installed at the site ranged from 0.53m to 2.76m. It was noted that the groundwater SWL fluctuated between development and sampling of the wells. Groundwater flow would generally be expected occurs in a down gradient direction perpendicular to the ground surface elevation contours. Based on this, groundwater is expected to generally flow towards the south-east.
Groundwater Field Parameters	Field measurements recorded during sampling were as follows: - pH ranged from 4.09 to 5.33; - EC ranged from 462.2µS/cm to 805µS/cm; - Eh ranged from 14.5mV to 20.4mV; and - DO ranged from 1.1ppm to 1.8ppm.
LNAPLs petroleum hydrocarbons	Phase separated product (i.e. LNAPL) were not detected using the interphase probe during groundwater sampling.
HGG Screen During drilling/excavation	HGG field measurements recorded during borehole/test pit drilling/excavation were as follows: - Methane (CH_4) concentrations recorded ranged from 0%v/v to 2.4%v/v; - Carbon dioxide (CO_2) concentrations ranged from 0%v/v to 11.9%v/v; - Oxygen (O_2) concentrations ranged from 14%v/v to 21.7%v/v; - Hydrogen sulphide (H_2S) concentrations recorded were all 0ppm; and, - Atmospheric pressure (mbar) ranged from 991mbar to 1000mbar. The highest methane and carbon dioxide results were detected in BH101 while drilling at a depth of 3mBGL. The HGG screening field sheets are attached in Appendix H.

7.4 Soil Laboratory Results

The soil laboratory results were assessed against the SAC presented in Section 6.1. Individual SAC are shown in the report tables attached in the appendices. A summary of the results is presented below:

7.4.1 Human Health and Environmental (Ecological) Assessment

Table 7-3: Summary of Soil Laboratory Results – Human Health and Environmental (Ecological)

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
Arsenic	56	22	0	0	-
Cadmium	56	1	0	NSL	
Chromium (total)	56	65	0	0	-
Copper	56	58	0	0	-
Lead	56	64	0	0	-
Mercury	56	0.2	0	NSL	-
Nickel	56	96	0	0	-
Zinc	56	120	0	0	-
Total PAHs	56	72	0	NSL	-
Benzo(a)pyrene	56	7.4	NSL	0	-
Carcinogenic PAHs (as BaP TEQ)	56	20	0	NSL	-
Naphthalene	56	<1	0	NSL	-
DDT+DDE+DDD	34	<0.1	0	NSL	-
DDT	34	<0.1	NSL	0	-
Aldrin and dieldrin	34	<0.1	0	NSL	-
Chlordane	34	<0.1	0	NSL	-
Heptachlor	34	<0.1	0	NSL	-
Chlorpyriphos (OPP)	34	<0.1	0	NSL	
PCBs	34	<0.1	0	NSL	-
TRH F1	56	<25	0	0	-
TRH F2	56	<50	0	0	-
TRH F3	56	560	0	0	-

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
TRH F4	56	470	0	0	-
Benzene	56	<0.2	0	0	-
Toluene	56	<0.5	0	0	-
Ethylbenzene	56	<1	0	0	-
Xylenes	56	<3	0	0	-
Asbestos (in soil)	44	ACM = 0.1364 % (w/w) FA/AF = 0.0046 % (w/w)	2	NA	Asbestos was detected in the form of loose fibre bundles (AF/FA) at concentrations that exceeded the SAC in the BH101 (1.5-1.95m) and BH128 (0-0.3m) samples. ACM was also detected in the BH101 (1.5-1.95m) sample at a concentration that exceeded the SAC. We note that AF/FA was also detected in the BH104 (0-0.2m), BH106 ((0-0.1m), BH110 (1-1.4m) and TP127 (0.3-0.6m) at concentrations less than the SAC.
Phenoxy acid herbicides, carbamates and synthetic pyrethroids	3	<0.5-to <2	0	0	None detected in the samples analysed.

Notes:

N: Total number (primary samples)

NSL: No set limit

NL: Not limiting

7.4.2 Waste Classification Assessment

The laboratory results were assessed against the criteria presented in Section 6.1.4. The results are presented in the report tables attached in the appendices. A summary of the results is presented in the following table:

Table 7-4: Summary of Soil Laboratory Results Compared to CT and SCC Criteria

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Arsenic	56	0	0	-
Cadmium	56	0	0	-
Chromium	56	0	0	-

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Copper	56	NSL	NSL	-
Lead	56	0	0	-
Mercury	56	0	0	-
Nickel	56	8	0	Nickel concentrations exceeded the CT1 criterion in eight fill samples collected from BH101 (0.07-0.2m), BH101 (0.5-0.95m), BH105 (0-0.1m), BH109 (0.2-0.41m), BH110 (0.09-0.4m), BH111 (0.05-0.4m), BH112 (0.08-0.3m) and BH125 (0-0.4m). The maximum nickel concentration was 96mg/kg.
Zinc	56	NSL	NSL	-
TRH (C_6-C_9)	56	0	0	-
TRH (C_{10}-C_{36})	56	0	0	-
BTEX	56	0	0	-
Total PAHs	56	0	0	-
Benzo(a)pyrene	56	5	0	Nickel concentrations exceeded the CT1 criterion in five fill samples collected from BH101 (0.5-0.95m), BH102 (0-0.2m), BH104 (0-0.2m), TP127 (0-0.1m) and TP129 (0-0.2m). The maximum benzo(a)pyrene concentration was 7.4mg/kg.
OCPs & OPPs	34	0	0	-
PCBs	34	0	0	-
Asbestos	44	-	-	Asbestos was detected in the BH101 (1.5-1.95m), BH104 (0-0.2m), BH106 (0-0.1m), BH110 (1-1.4m), TP127 (0.3-0.6m) and BH128 (0-0.3m) samples.

N: Total number (primary samples)

NSL: No set limit

Table 7-5: Summary of Soil Laboratory Results Compared to TCLP Criteria

Analyte	N	N > TCLP Criteria	Comments
Nickel	8	0	The eight fill samples with nickel concentrations above the CT1 criterion were analysed for TCLP nickel.
Benzo(a)pyrene	5	0	The five fill samples with benzo(a)pyrene concentrations above the CT1 criterion were analysed for TCLP PAHs, including benzo(a)pyrene.

N: Total number (primary samples)

7.5 Groundwater Laboratory Results

The soil laboratory results were assessed against the SAC presented in Section 6.2. Individual SAC are shown in the report tables attached in the appendices. A summary of the results is presented below:

Table 7-6: Summary of Groundwater Laboratory Results – Human Health and Environmental (Ecological)

Analyte	N ^	Max. (µg/L)	N> Human Health SAC	N> Ecological SAC	Comments
Arsenic	3	<1	0	0	-
Cadmium	3	<0.1	0	0	-
Chromium (total)	3	<1	0	0	-
Copper	3	4	0	2	The copper results in the MW101A and MW105 samples of 4µg/L and 2µg/L, respectively, exceeded the ecological based SAC.
Lead	3	<1	0	0	-
Mercury	3	<0.05	0	0	-
Nickel	3	5	0	0	-
Zinc	3	41	0	2	The zinc results in the MW101A and MW105 samples of 41µg/L and 12µg/L, respectively, exceeded the ecological based SAC.
Total PAHs	3	<0.1	0	0	-
Benzo(a)pyrene	3	<0.1	0	0	-
Naphthalene	3	<0.2	0	0	-
TRH F1	3	<10	0	NSL	-
TRH F2	3	85	0	NSL	-
TRH F3	3	<100	NSL	NSL	-
TRH F4	3	<100	NSL	NSL	-
Benzene	3	<1	0	0	-
Toluene	3	<1	0	0	-
Ethylbenzene	3	<1	0	0	-
m+p-Xylene	3	<2	0	0	-
o-Xylene	3	<1	0	0	-

Analyte	N ^	Max. (µg/L)	N> Human Health SAC	N> Ecological SAC	Comments
Total Xylenes	3	<2	0	0	-
pH	3	4.4	NSL	3	All three pH results were less than 6.5.
EC	3	520	NSL	NSL	-

Notes:

^: Primary samples

N: Total number

NSL: No set limit

NL: Not limiting

7.6 HGG Results

7.6.1 HGG Spot Monitoring Results

The HGG spot monitoring records and summary results tables are attached in Appendix B. A summary of the HGG spot monitoring results is presented below:

Table 7-7: Summary of HGG Spot Monitoring Results

Measurement	Monitoring Well Concentrations/Measurement Results
Methane (CH_4)	The CH_4 concentrations recorded at the HGG monitoring wells using the landfill gas meter ranged from 0%v/v to 1.3%v/v during the round of monitoring (12 December 2021). Methane was only detected in MW101.
Carbon dioxide (CO_2)	The CO_2 concentrations recorded at the monitoring wells ranged from 6.8%v/v to 14.2%v/v.
Oxygen (O_2)	The O_2 concentrations recorded at the monitoring wells ranged from 17.9%v/v to 20.3%v/v.
Hydrogen sulphide (H_2S)	The H_2S concentrations recorded at the monitoring wells were all 0ppm.
Carbon monoxide (CO)	The CO concentrations recorded at the monitoring wells were all 0ppm.
Atmospheric Pressure (hPa)	The atmospheric pressure reading during the monitoring well screening ranged from 993 mbar to 995bar.
Flow Rates (L/hr)	Peak flow rates recorded in the monitoring wells were both 1.2L/hr.

7.6.2 Calculated Gas Screening Values (GSV)

The HGG spot monitoring results obtained during a single monitoring round were assessed against the SAC presented in Section 6.3. The HGG summary results Table SG1 is attached in Appendix B.

A GSV is obtained following the Wilson and Card method by multiplying the maximum borehole (monitoring well) flow rate (L/hr) and the maximum HGG concentration (%). A GSV value is calculated for both methane

and carbon dioxide and the worst-case value is adopted. The worst-case methane GSV was 0.02L/hr and the worst-case carbon dioxide GSV was 0.17L/hr (based on the spot monitoring dataset).

7.6.3 Calculated Characteristic Gas Situation (CS) Values

The carbon dioxide and methane GSV were assessed against the Modified Wilson and Card Classification. The maximum site wide worst case CS value for the spot monitoring data is CS2.

8 WASTE CLASSIFICATION ASSESSMENT

8.1 Waste Classification of Fill

Based on the results of the waste classification assessment, and at the time of reporting, the fill material is classified as **General Solid Waste (non-putrescible) containing Special Waste (asbestos)**. Surplus fill should be disposed of to a facility that is appropriately licensed to receive this waste stream. The facility should be contacted to obtain the required approvals prior to commencement of excavation.

8.2 Classification of Natural Soil and Bedrock

Based on the scope of work undertaken for this assessment, and at the time of reporting, JKE is of the opinion that the natural soil and bedrock at the site is likely to meet the definition of **VENM** for off-site disposal or re-use purposes. Further assessment will be required to confirm this classification following removal of the overlying fill and validation of the AST removal.

9 DISCUSSION

9.1 Contamination Sources/AEC and Potential for Site Contamination

Based on the scope of work undertaken for this investigation, JKE identified the following potential contamination sources/AEC:

- Fill material, including a potential for HGG in deep fill;
- An AST used to store diesel;
- Historical agricultural use of the site;
- Pesticides may have been used beneath the buildings and/or around the site; and
- Hazardous building materials from former building and demolition activities. These materials may also be present in the existing buildings/structures on site.

The preliminary soil, groundwater and HGG data collected for the investigation is discussed further in the following subsection, as part of the Tier 1 risk assessment.

9.2 Tier 1 Risk Assessment and Review of CSM

For a contaminant to represent a risk to a receptor, the following three conditions must be present:

1. Source – The presence of a contaminant;
2. Pathway – A mechanism or action by which a receptor can become exposed to the contaminant; and
3. Receptor – The human or ecological entity which may be adversely impacted following exposure to contamination.

If one of the above components is missing, the potential for adverse risks is relatively low.

9.2.1 Soil

All of the soil analysis results were less than the SAC, with the exception of asbestos. We note that asbestos was detected at concentrations that exceeded the SAC in fill samples from BH101 and BH128. Asbestos was also detected at concentrations less than the SAC in fill samples from BH104, BH106, BH110 and TP127.

The source of the asbestos is considered likely to be the demolition material that was observed throughout the fill. The asbestos impact would be limited vertically to the depth of fill and appears to extend horizontally across the entire site. The asbestos was primarily in the form of AF/FA, is considered to be friable and represents a greater risk to human receptors compared to the ACM.

There was no visible asbestos at the ground surface and only limited samples containing asbestos were from at or near the surface. On this basis, there is considered to be a low risk of a complete SPR-linkage at present in the current site configuration and risks from asbestos are likely to remain low whilst the fill remains undisturbed. The risk of exposure to asbestos could increase during excavation/disturbance of the fill if such activities are not managed appropriately.

As all remaining CoPC were below the SAC, complete SPR-linkages were not identified. The potential exists for localised and unidentified impacts directly beneath the AST and/or beneath buildings/areas that were

not accessible. These risks can be managed via the implementation of appropriate procedures during and following demolition.

9.2.2 Groundwater

Concentrations of copper and zinc, and the pH, exceeded the ecological based SAC in the majority of samples. We note that the ecological SAC were adopted as a conservative measure and that no direct ecological receptors were identified. The relatively consistency of the results across the site indicates that these heavy metals are likely due to regional conditions rather than being indicative of site-specific contamination. Based on this and the distance (1,800m) to the nearest ecological receptor, these exceedances are considered to present a negligible risk.

We note that no TRH or BTEX was detected in the MW102 sample, located immediately east of the AST. Traces of TRH (F2) were detected in MW101A in the north-eastern corner of the site. The variable fill depths in this area could suggest that buried infrastructure such as an underground tank may exist or may have formerly existed in this area. However, this was not supported by the historical records, site observations, or any other subsurface observations of staining or odours etc. On this basis, risks associated with the TRH in groundwater are likely to be low and can therefore be managed via the implementation of appropriate procedures during and following demolition.

9.2.3 HGG

Methane and carbon dioxide were encountered both during drilling of BH101 and spot monitoring in MW101. We note that MW101 is located in the north-east corner of the site, outside of the proposed building footprint. The methane and carbon dioxide are considered likely to be associated with organic material in fill.

Due to the detections of HGG and gas flow in the monitoring wells, further investigation, monitoring and assessment of HGG risks will be required. Based on the current proposed development details it appears that fill is likely to remain across the site. Areas between BH101 and existing/proposed buildings should be targeted during further investigation.

9.3 Decision Statements

The decision statements are addressed below:

Are any results above the SAC?

Asbestos was detected in the fill at concentrations that exceeded the human health based SAC. The HGG results indicated the presence of methane and carbon dioxide at concentrations that exceeded the SAC in MW101.

Did the preliminary HGG screening identify methane or carbon dioxide concentrations of concern?

Yes. Methane, carbon dioxide and gas flow were identified within the monitoring wells.

Do potential risks associated with contamination exist, and if so, what are they?

The asbestos in fill is considered to represent a potential risk to human receptors at the site. Further investigation will be required to better assess the risk posed by HGG.

Is remediation required?

Remediation will be required to reduce the risks associated with the asbestos in fill. At this time, it is unclear whether remediation or mitigation of HGG-related risks will be required.

Is the site suitable for the proposed development, or can the site be made suitable subject to further characterisation and/or remediation?

JKE consider that the site can be made suitable for the proposed development via remediation.

9.4 Data Gaps

An assessment of data gaps is provided in the following table:

Table 9-1: Data Gap Assessment

Data Gap	Assessment
Groundwater flow direction not confirmed / groundwater assessment limited in scope	Widespread contamination was not identified in groundwater. The source of the TRH (F2) detected in MW101 has not been confirmed and this will need to be managed via the implementation of appropriate procedures during and following demolition.
HGG assessment limited	The HGG assessment was limited to field screening during drilling and a single monitoring event from two HGG wells. Additional monitoring and risk analysis is necessary to meet guideline requirements. Recommendations for additional HGG assessment are included in the report to address this data gap.

10 CONCLUSIONS AND RECOMMENDATIONS

The investigation included a review of historical information contained in a previous PSI, soil sampling from 30 boreholes/test pits, groundwater sampling from three monitoring wells and HGG sampling from two monitoring wells. The site has historically been occupied by a commercial nursery and market gardens.

Asbestos was identified in fill. The asbestos in fill is considered to represent a potential risk to human receptors at the site. Methane and carbon dioxide were also detected in bulk ground gas. Further investigation will be required to better assess the risk posed by HGG.

JKE consider the site can be made suitable for the proposed development via remediation. The following is recommended:

- A Remediation Action Plan (RAP) should be prepared to outline measures to reduce the risks associated with the asbestos in fill at the site. The RAP must also outline the details of additional HGG monitoring at the site and other site management protocols to address the data gaps;
- An Asbestos Management Plan (AMP) is to prepared for the construction phase of the proposed development for the removal of the asbestos waste, as required under the NSW Work Health and Safety Regulation 2017; and
- An AMP is to be prepared for management of asbestos in soil whilst the existing retail premises continue to operate.

At this stage, JKE consider there is no requirement to notify any contamination under the NSW EPA Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[15].

JKE consider that the report objectives outlined in Section 1.2 have been addressed.

[15] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997* (referred to as Duty to Report Contamination)

11 LIMITATIONS

The report limitations are outlined below:

- JKE accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the JKE proposal; and terms of contract between JKE and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, JKE has not undertaken any verification process, except where specifically stated in the report;
- JKE has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
- JKE accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- JKE has not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or landuse. JKE should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors
This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the investigation. If the subject site is sold, ownership of the investigation report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the investigation was undertaken. No person should apply an investigation for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions
Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an investigation report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data
Site investigations identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an investigation indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Investigation Limitations
Although information provided by a site investigation can reduce exposure to the risk of the presence of contamination, no environmental site investigation can eliminate the risk. Even a rigorous professional investigation may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Investigations by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an investigation report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Investigation Report

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the investigation. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the investigation. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete investigation should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site investigation is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site investigation, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

Appendix A: Report Figures



AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

This plan should be read in conjunction with the Environmental report.

Title: **SITE LOCATION PLAN**

Location: 277 MONA VALE ROAD, TERREY HILLS, NSW

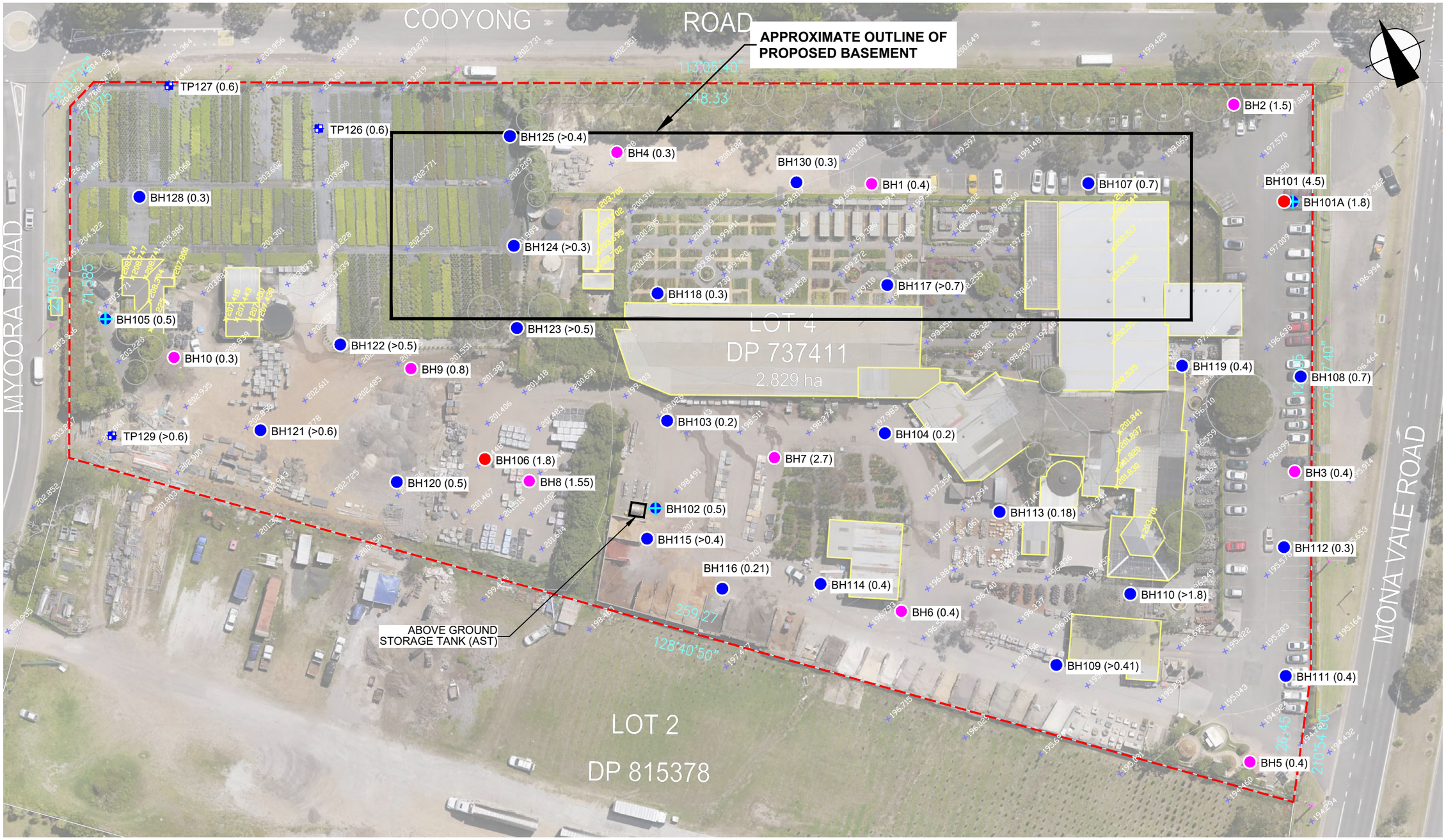
Project No: E34278PH

Figure No: 1

JKEnvironments

PLOT DATE: 25/10/2021 1:24:06 PM DWG FILE: S:\5 EIS\5C EIS JOBS\34000'S\E34278PH TERREY HILLS\CAD\E34278PH.DWG

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LEGEND

APPROXIMATE SITE BOUNDARY	
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2021)
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)
BH/MW(Fill Depth)	BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)
TP(Fill Depth)	TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)
BH(Fill Depth)	BOREHOLE AND HAZARDOUS GROUND GAS WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)

0 8 16 24 32 40
SCALE 1:800 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title: **SAMPLE LOCATION PLAN**

Location: 277 MONA VALE ROAD, TERREY HILLS, NSW

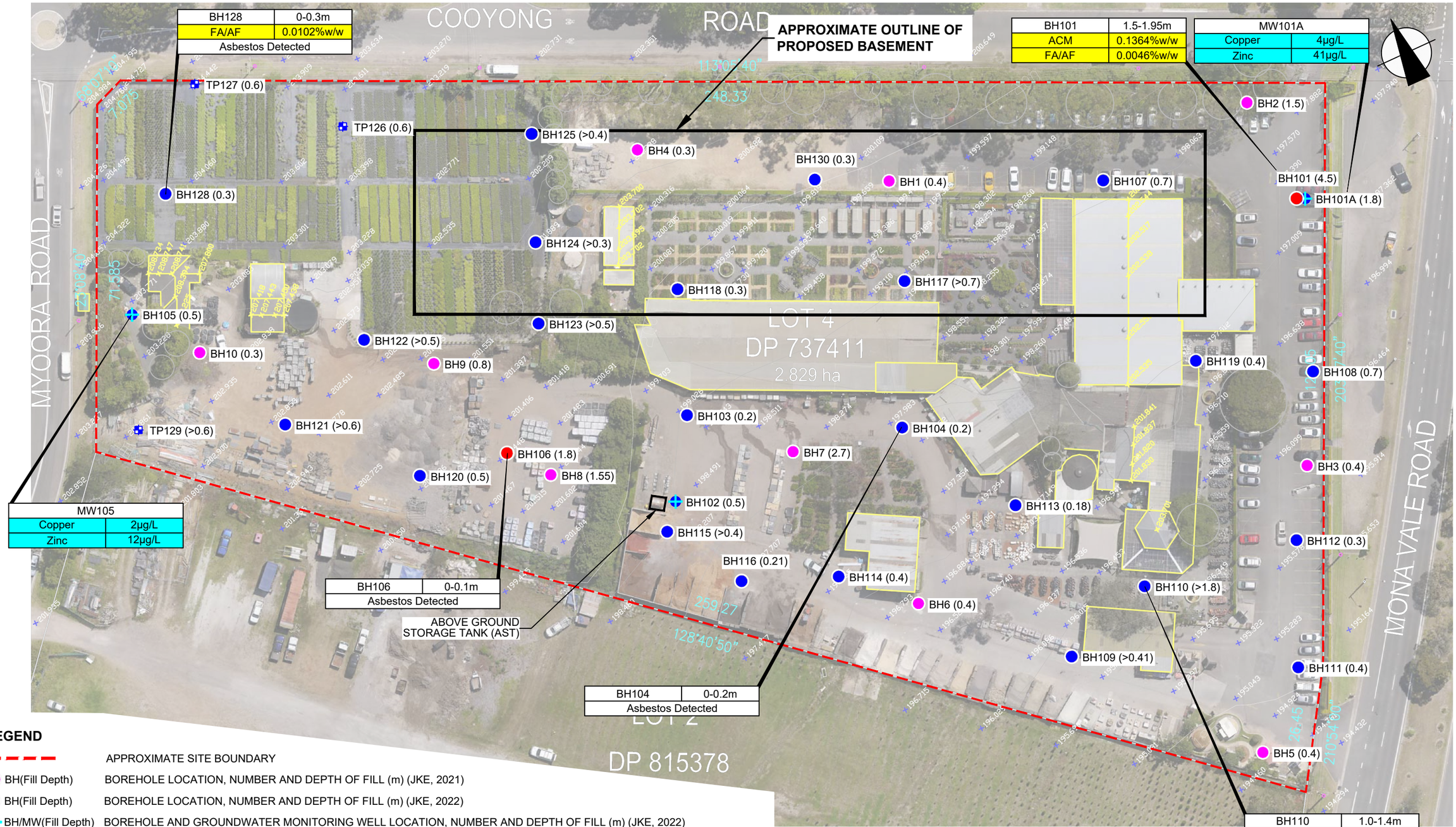
Project No: E34278PH

Figure No: 2

JKEnvironments

PLOT DATE: 25/01/2022 3:48:17 PM DWG FILE: S:\5 EIS\5C EIS JOBS\34000'S\E34278PH TERREY HILLS\CAD\E34278PH.DWG

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LEGEND

APPROXIMATE SITE BOUNDARY	
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2021)
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)
BH/MW(Fill Depth)	BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)
TP(Fill Depth)	TEST PIT LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)
BH(Fill Depth)	BOREHOLE AND HAZARDOUS GROUND GAS WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, 2022)

SAMPLE ID	DEPTH (metres)
CHEMICAL	CONCENTRATION

SOIL/SURFACE SAMPLE EXCEEDANCE

SAMPLE ID	-
CHEMICAL	CONCENTRATION (µg/L)

GROUNDWATER SAMPLE EXCEEDANCE

SOIL/SURFACE CONTAMINATION ABOVE SAC FOR HUMAN HEALTH RISK

GROUNDWATER CONTAMINATION ABOVE SAC

0 8 16 24 32 40
SCALE 1:800 @A3 METRES

This plan should be read in conjunction with the Environmental report.

Title: **SAC EXCEEDANCE PLAN**

Location: 277 MONA VALE ROAD, TERREY HILLS, NSW

Project No: E34278PH

Figure No: 3

JKEnvironments

PLOT DATE: 25/01/2022 3:48:29 PM DWG FILE: S:\5 EIS\5C EIS JOBS\34000'S\E34278PH TERREY HILLS\CAD\E34278PH.DWG

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Appendix B: Site Information and Site History

Proposed Development Plans

FLOWER POWER GARDEN CENTRE TERRY HILLS
277 MONA VALE ROAD TERREY HILLS NSW

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P1	ISSUE FOR INFORMATION	17.04.23	CSG
P2	ISSUE FOR DA	18.05.23	CSG
A	ISSUE FOR DA	30.05.23	CSG

DA - DRAWING LIST

Sheet Number	Current Revision	Sheet Name
DA000	A	COVER SHEET
DA01	A	RENDERED VIEWS
DA10	A	EXISTING CONDITIONS PLAN
DA11	A	DEMOLITION PLAN
DA15	A	PROPOSED SITE PLAN
DA17	A	SHADOW DIAGRAMS
DA19	A	HEIGHT NON-COMPLIANCE
DA100	A	OVERALL FLOOR PLAN
DA111	A	FLOOR PLAN - 1 OF 3
DA112	A	FLOOR PLAN - 2 OF 3
DA113	A	FLOOR PLAN - 3 OF 3
DA120	A	OVERALL ROOF PLAN
DA150	A	ELEVATION- SHEET 1
DA151	A	ELEVATION- SHEET 2
DA152	A	ELEVATION- SHEET 3
DA160	A	SECTIONS- SHEET 1
DA161	A	SECTIONS- SHEET 2
DA162	A	SECTIONS- SHEET 3
DA163	A	SECTIONS- SHEET 4
Total: 19		



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COVER SHEET

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0 40 80 120 160 200 SCALE 1:2000

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
DATE: 02/12/21 DA000 A
DRAWN: TJT/CSG

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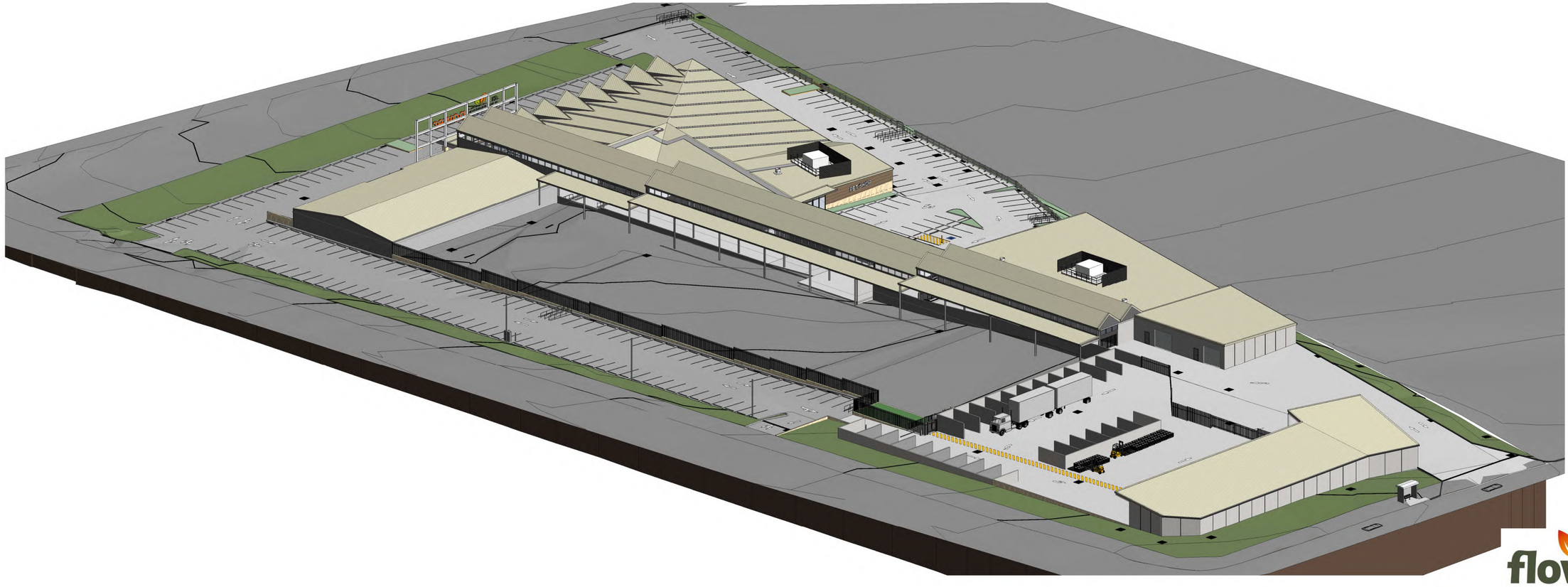
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A	ISSUE FOR DA	30.05.23	CSG



3D VIEW 1



3D VIEW 2

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RENDERED VIEWS

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SCALE NTS

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932
DATE: 13/01/22
DRAWN: TJT/CSG
DWG NO. DA01
REV. A

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A	ISSUE FOR DA	30.05.23	CSG

NOTES:
- ALL LEVELS ARE AHD VIDE PM9464
- NATURAL SURFACE HEIGHTS AND RIDGE-LINE ST
- BUILDING OUTLINES ARE TO BE CONSIDERED AS ACCURATE

39 MYOORA RD
64 COOYONG RD
1 CURRONG CCT
CURRONG CCT
2 CURRONG CCT
14 COOYONG RD
12 COOYONG RD
10 COOYONG RD
DUNCAN RESERVE
6 COOYONG RD
4 COOYONG RD
1 COOYONG RD
COOYONG ROAD
MYOORA ROAD
VALE ROAD
MONA VALE ROAD
TERREY HILLS PUBLIC SCHOOL
EXISTING BUS STOP + AWNING
62 MYOORA ROAD
EXISTING 2x WATER TANKS
EXISTING BRICKWALL WATER CONTAINMENT TANK
EXISTING 4x WATER TANKS
EXISTING PUMP ROOM
EXISTING ELEC'L. POLE
EXISTING ELEC'L. POLE
EXISTING ELECTRICAL BOX
EXISTING PARKING
ENTRY/ EXIT
OPEN NURSERY AREA
EXISTING GARDEN CENTRE
EXISTING TENANCY LOACTION
EXISTING SPA TENANCY
EXISTING POTS ZONE
EXISTING PARKING
EXISTING LANDSCAPE SHOP
EXISTING LANDSCAPE BINS AREA
ENTRY
LOT 4
DP737411
2.829ha
ADJOINING PROPERTY
279 MONAVALE RD
BOUNDARY
113°05'58" 248.32
308°40'58" 259.25
23°08'58" 71.59
203°07'58" 120.03
30°54'02" 25.45
7.01
BOUNDARY 197.471

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EXISTING CONDITIONS PLAN

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SCALE 1:500
0 10 20 30 40 50

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932
DATE: 14/12/21
DRAWN: TJT/CSG
DWG NO. DA10
REV. A

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DEMOLITION KEY

LEGEND:

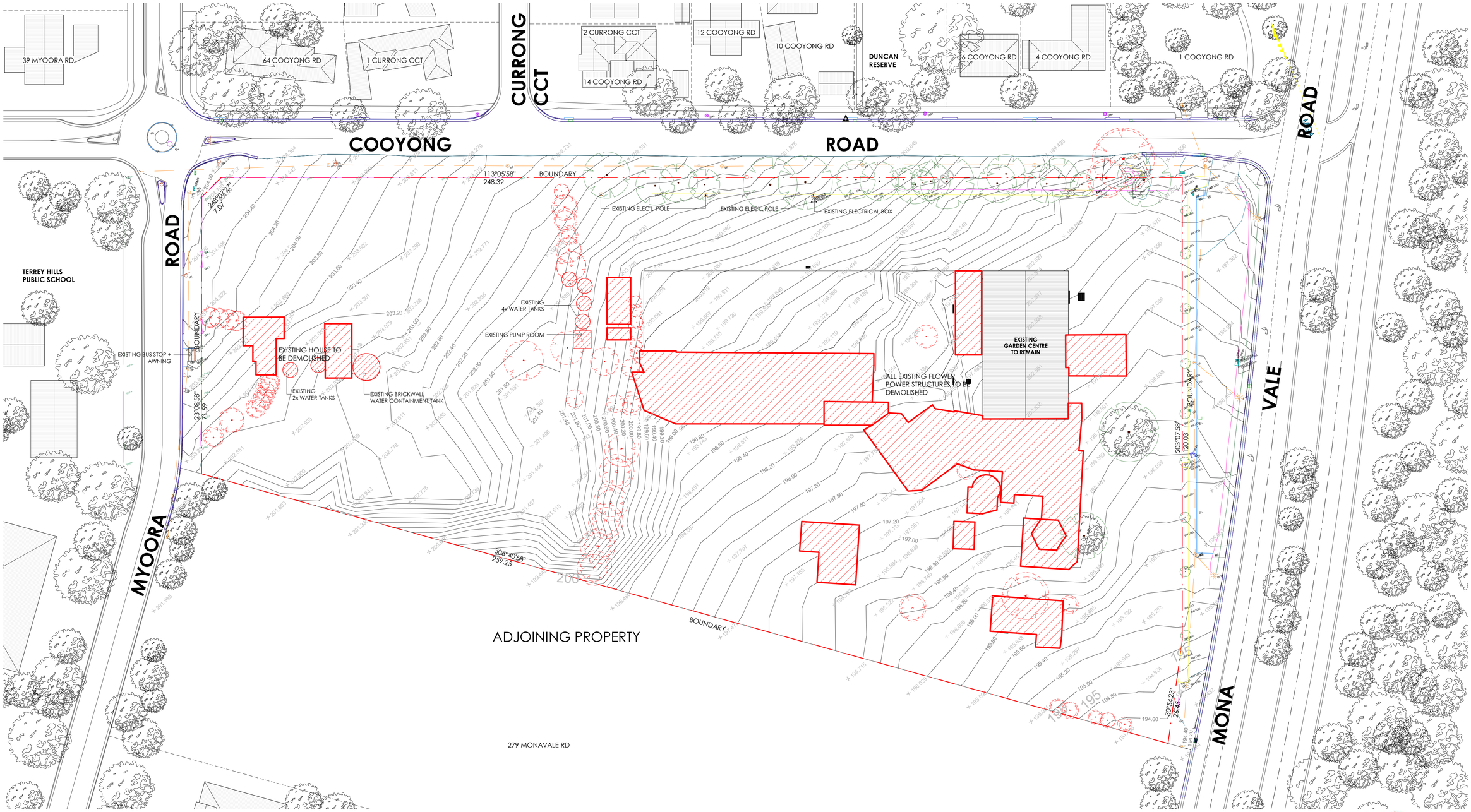
- TO BE DEMOLISHED
- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED

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DEMOLITION PLAN

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SCALE 1:500

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
DATE: 14/12/21 DA11 A
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64 COOYONG RD
1 CURRONG CCT
CURRONG CCT
2 CURRONG CCT
14 COOYONG RD
12 COOYONG RD
10 COOYONG RD
DUNCAN RESERVE
6 COOYONG RD
4 COOYONG RD
1 COOYONG RD
COOYONG ROAD
VALE ROAD
MYOORA ROAD
MONA ROAD
TERREY HILLS PUBLIC SCHOOL
279 MONAVALE RD
ADJOINING PROPERTY
LOT 2
DP815378
LOT 4
DP737411
2.829ha
EXISTING OPEN NURSERY AREA
NEW EXIT
REPOSITION ENTRY/EXIT
BOUNDARY
113°05'58" 248.32
248°07'27" 1.07
308°40'58" 259.25
CAR EXIT ONLY- NO PEDESTRIAN ACCESS
EXISTING ELECTRICAL BOX
2600 TYPICAL
8400
EXISTING BUILDING
TROLLEY BAYS
FENCE-PALISADE
BIN AREA
LANDSCAPE SHOP
OPEN BULKY GOODS DISPLAY AREA
EXISTING BUS STOP + AWNING
EXIT ONLY
ENTRY/EXIT
TRUCK LOADING/ HARDSTAND AREA
GARDEN CENTRE GOODS STORE
FRUIT SHOP
PET SHOP
RETAIL
EXISTING GARDEN CENTRE
EXISTING GRATED DRAIN
GRATED DRAIN
ENTRY STATEMENT/SIGN
RETAIN EXISTING ENTRY
PROPOSED UNDERGROUND IRRIGATION TANK BELOW IN DOTTED LINES AS PER CIVIL DRAWINGS.
STORMWATER OSD BELOW IN DOTTED LINES AS PER CIVIL DRAWINGS.
SOUTH BOUNDARY LANDSCAPING
NEW 1:4 BATTER LANDSCAPE SHADED IN GREEN
NEW BATTER LANDSCAPE EXTENT TBC ON SITE
EXTEND EXISTING LANDSCAPING ALONG BOUNDARY
RL. 207.552 -RIDGE
RL. 207.099 -RIDGE
RL. 205.504 -RIDGE BELOW CLERESTORY
RL. 204.010 -RIDGE
RL. 202.551 -EXISTING RIDGE(TBC)
RL. 203.363
RL. 203.400
RL. 202.800
RL. 201.460
RL. 201.700
RL. 201.200
RL. 201.040
RL. 201.254
RL. 202.251
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RL. 200.500
RL. 200.357
RL. 200.000
RL. 200.229
RL. 199.760
RL. 199.000
RL. 198.725
RL. 195.300
RL. 204.019 -RIDGE
7.50°
1:32
1:35
1:40
1:50
1:52
1:67
1:78
1:60
1:20
1:29
1:28
1:34
1:30
4.33°
2°
7°
6000
10000
2400
5400
6600
4200
2.00
3.00

SITE AREA = 28,299 m²

Area Schedule (Gross Floor Area)

EXISTING GARDEN CENTRE	837 m²
EXISTING OPEN NURSERY AREA	3,327 m²
PROPOSED NURSERY EXTENSION	1,472 m²
RETAIL	1,854 m²
STORE - (RETAIL)	159 m²
STAFF/AMENITIES	243 m²
PET SHOP- (RETAIL LEVEL 2)	402 m²
CAFE	340 m²
SERVERY	59 m²
KITCHEN STORE	34 m²
OUTDOOR KIDS PLAY AREA	181 m²
ACCESS RAMP & STAIR	134 m²
SERVICE ACCESS 1	302 m²
SERVICE ACCESS 2	293 m²
FRUIT SHOP	1,349 m²
GARDEN CENTRE GOODS STORE	239 m²
PLANT STORE	146 m²
LANDSCAPE SHOP	570 m²
LANDSCAPE BINS	578 m²
OPEN BULKY GOODS DISPLAY AREA	257 m²
LANDSCAPING	4,774 m²
TRUCK HARDSTAND AREA & DRIVEWAYS	3,812 m²
CARSPACES & DRIVEWAYS	7,234 m²
TOTAL	28,596 m²

(Gross Floor Area) EXCLUDING EXISTING GARDEN CENTRE & OPEN NURSERY AREA

24,432 m²

Parking Schedule

ACCESSIBLE CAR SPACES	8
CAR SPACES	250
TOTAL	258

PREVIOUS DA- AREA SCHEDULE (15.03.22)

KEY	LOCATION	AREA
A) 1.	GARDEN CENTRE	2925 m²
2.	AMENITIES	59 m²
3.	STORAGE	94 m²
	TOTAL =	**3078 m²**
B) 1.	CAFE INDOOR	228 m²
2.	CAFE OUTSIDE	162 m²
3.	KIDS PLAYGROUND	197 m²
	TOTAL =	**587 m²**
C) 1.	OPEN NURSERY	3068 m²
2.	POTS ZONE	720 m²
3.	SERVICE DRIVEWAY	592 m²
	TOTAL =	**4380 m²**
D) 1.	STORAGE	335 m²
2.	STAFF ZONE	110 m²
3.	AMENITIES	35 m²
4.	PLANT STORAGE	82 m²
5.	LOADING DOCK	410 m²
6.	PLANT AREA	36 m²
	TOTAL =	**1008 m²**
E) 1.	LANDSCAPE ZONE	1275 m²
2.	LANDSCAPE SHOP	272 m²
3.	LANDSCAPE BINS	480 m²
	TOTAL =	**2027 m²**
F) 1.	TENANCY SPACES	1844 m²
2.	TENANCY LOADING	46m²
3.	AMENITIES	35m²
	TOTAL =	**1925 m²**
A) 1.	PLANT	495 m²
2.	BASEMENT PARKING	5570 m²
	TOTAL =	**6065 m²**

LOCATION	AREA	%
SITE COVERAGE	8579m²	30%
TOTAL =	**8579 m²**	**30%**
SOUTH BOUNDARY LANDSCAPING	642 m²	2%
MONA VALE ROAD LANDSCAPING	1775 m²	6%
COOYONG ROAD LANDSCAPING	1525 m²	5%
INTERNAL LANDSCAPING	990 m²	4%
OPEN NURSERY	3465 m²	12%
TOTAL =	**8397 m²**	**29%**
DRIVEWAYS/ HARD SURFACE	**11323 m²**	**40%**
TOTAL SITE AREA =	**28,299 m²**	

PARKING	NO.
BASEMENT PARKING	203
BASEMENT DISABLED	2
GF PARKING	179
GF DISABLED	6
TOTAL =	**382**
TOTAL DISABLED =	**8**

LEGEND:

TO BE DEMOLISHED

EXISTING TREES TO BE RETAINED

TREES TO BE REMOVED

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PROPOSED SITE PLAN

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SCALE 1:200 (0 4 8 12 16 20)

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277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DATE: 03/27/23 DRAWN: Author
DWG NO. DA15 REV. A

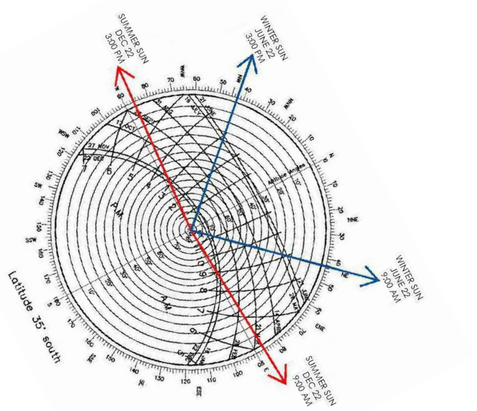
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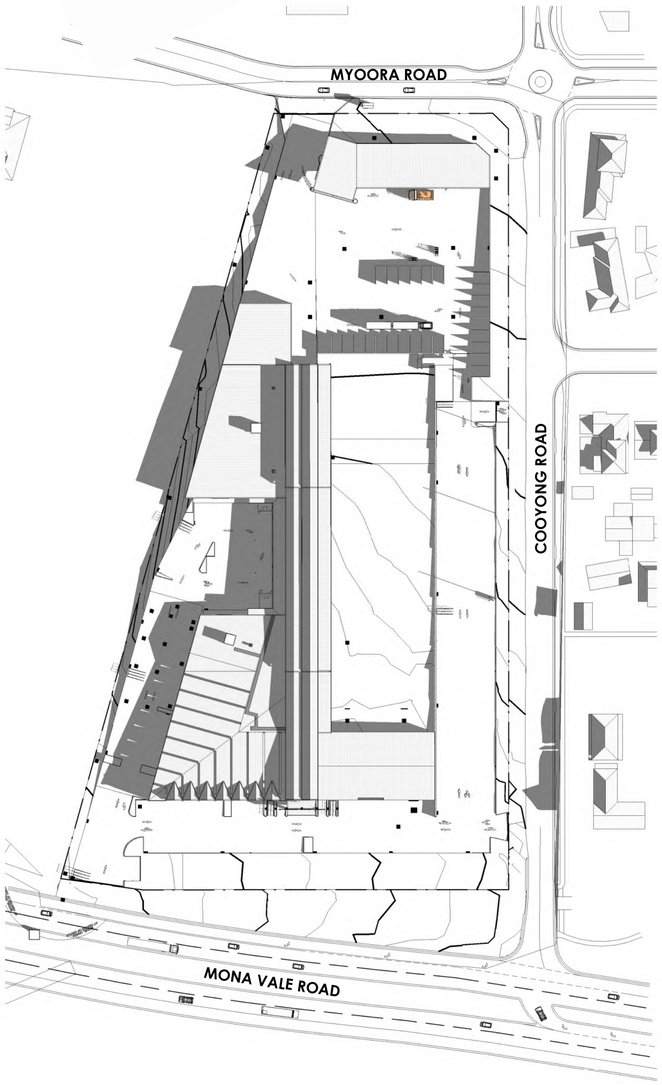
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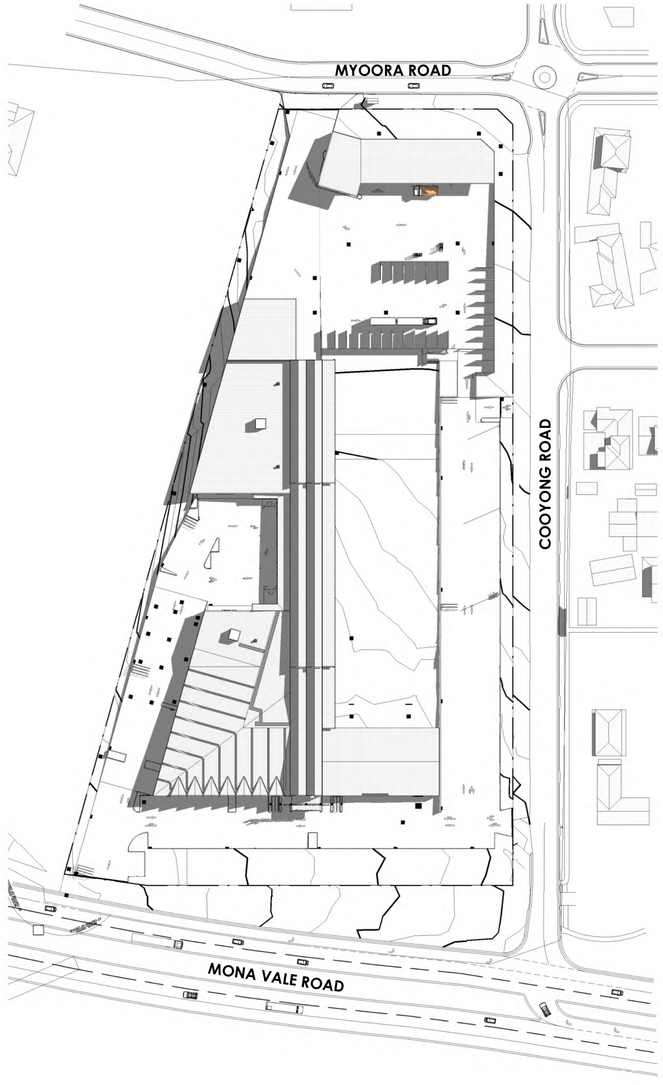
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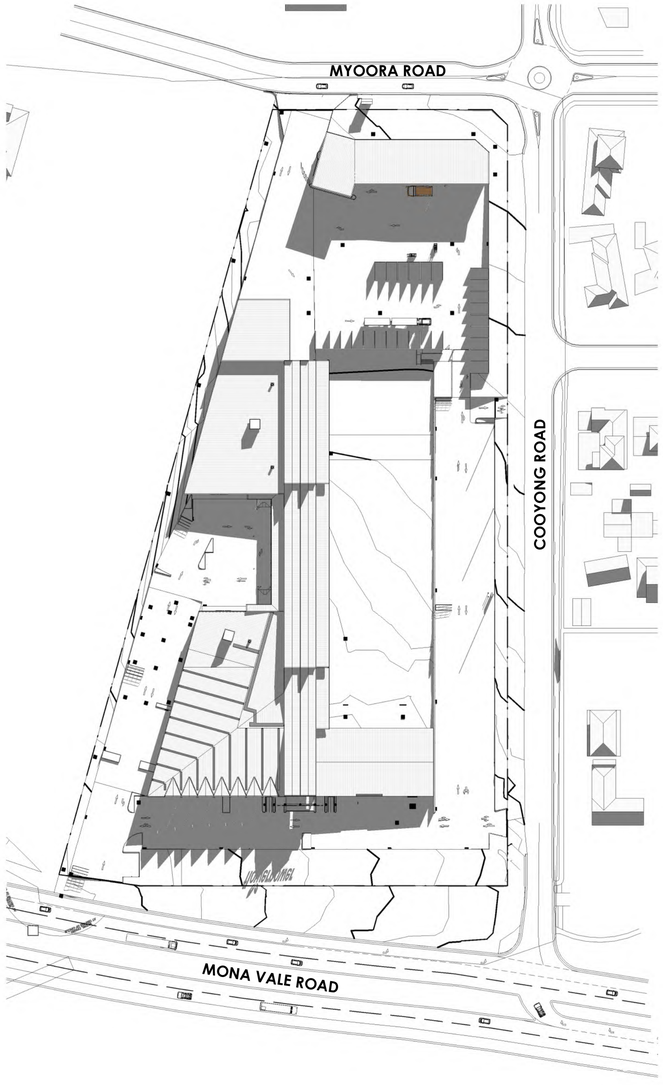
SUNPATH DIAGRAM



1 DA150 **JUNE 22nd - 9am**
Scale: 1 : 1000



2 DA150 **JUNE 22nd - 12pm**
Scale: 1 : 1000



3 DA150 **JUNE 22nd - 3pm**
Scale: 1 : 1000

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SHADOW DIAGRAMS

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WEB: www.lefflersimes.com.au BRISBANE L5 U39 131 LEICHHARDT ST, SPRING HILL, QLD 4000 T:+61 7 31235544

SCALE 1:2000 (0 20 40 60 80 200)

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. DA17 REV. A
DATE: 16/12/21
DRAWN: TJT/CSG

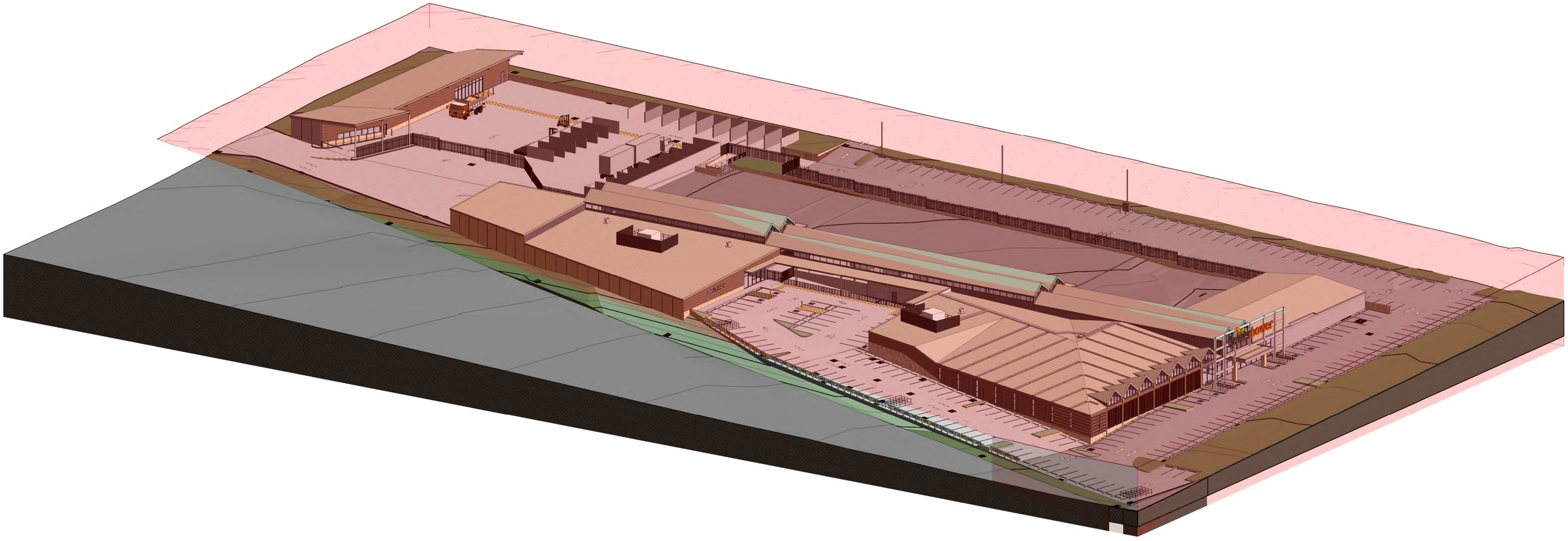
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HEIGHT NON-COMPLIANCE

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SCALE NTS

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932
DATE: 09/02/22
DRAWN: TJT/CSG
DWG NO. DA19
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64 COOYONG RD
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NEW EXIT
REPOSITION ENTRY/EXIT
BOUNDARY
113°05'58" 248.32
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203°05'58" 120.03
LOT 4
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LANDSCAPE SHOP
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OPEN BULKY GOODS DISPLAY AREA
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ACCESSIBLE RAMP
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FENCE-PALISADE
TROLLEY BAYS
EXISTING ELECTRICAL BOX
EXISTING GARDEN CENTRE
RL. 197.000 EXISTING
EXISTING OPEN NURSERY AREA
EXISTING GRATED DRAIN
GRATED DRAIN
SPEAR TOP GATE (DOUBLE) WITH SIGNAGE FOR SERVICE USE ONLY-NO PEDESTRIAN ACCESS
CLERESTORY WINDOWS/GLAZING OVER IN DOTTED LINES
OUTDOOR KIDS PLAY AREA
RL. 199.500
SEATING
RL. 199.000
CAFE
SEATING
STAIR
ENTRY
ENTRY STATEMENT/SIGN
AWNING OVER IN DOTTED LINES
1:14 ACCESSIBLE RAMP
TROLLEY BAYS
P.O.S.
STORE
STAFF OFFICE
RL. 197.000
RETAIL
RL. 197.000
SERVICE ACCESS 2 (FORKLIFT RAMP)
SERVICE ACCESS 1 (FORKLIFT RAMP)
STORE
SERVERY
(PET SHOP OVER @ RL 200.000- SEE DWG. No.2 BELOW)
PROPOSED UNDERGROUND IRRIGATION TANK BELOW IN DOTTED LINES AS PER CIVIL DRAWINGS.
RETAIN EXISTING ENTRY
ENTRY/EXIT (TRUCK)
EXIT ONLY
TRUCK LOADING/ HARDSTAND AREA
GARDEN CENTRE GOODS STORE
PLANT STORE
RL. 202.800
FRUIT SHOP
RL. 200.500
SPEAR TOP GATE (DOUBLE) WITH SIGNAGE 'FOR SERVICE USE ONLY-NO PEDESTRIAN ACCESS'
SOUTH BOUNDARY LANDSCAPING
EXTEND EXISTING LANDSCAPING ALONG BOUNDARY
ADJOINING PROPERTY
LOT 2
DP815378
NEW 1:4 BATTER LANDSCAPE SHADED IN GREEN
NEW BATTER LANDSCAPE EXTENT TBC ON SITE
NEW BATTER LANDSCAPE EXTENT TBC ON SITE
279 MONAVALE RD
STORMWATER OSD BELOW IN DOTTED LINES AS PER CIVIL DRAWINGS.
TYPICAL
EXISTING

SITE AREA = 28,299 m²

Area Schedule (Gross Floor Area)

EXISTING GARDEN CENTRE	837 m²
EXISTING OPEN NURSERY AREA	3,327 m²
PROPOSED NURSERY EXTENSION	1,472 m²
RETAIL	1,854 m²
STORE - (RETAIL)	159 m²
STAFF/AMENITIES	243 m²
PET SHOP- (RETAIL LEVEL 2)	402 m²
CAFE	340 m²
SERVERY	59 m²
KITCHEN STORE	34 m²
OUTDOOR KIDS PLAY AREA	181 m²
ACCESS RAMP & STAIR	134 m²
SERVICE ACCESS 1	302 m²
SERVICE ACCESS 2	293 m²
FRUIT SHOP	1,349 m²
GARDEN CENTRE GOODS STORE	239 m²
PLANT STORE	146 m²
LANDSCAPE SHOP	570 m²
LANDSCAPE BINS	578 m²
OPEN BULKY GOODS DISPLAY AREA	257 m²
LANDSCAPING	4,774 m²
TRUCK HARDSTAND AREA & DRIVEWAYS	3,812 m²
CARSPACES & DRIVEWAYS	7,234 m²
TOTAL	28,596 m²

(Gross Floor Area) EXCLUDING EXISTING GARDEN CENTRE & OPEN NURSERY AREA

24,432 m²

PREVIOUS DA- AREA SCHEDULE (15.03.22)

KEY	LOCATION	AREA
A) 1.	GARDEN CENTRE	2925 m²
2.	AMENITIES	59 m²
3.	STORAGE	94 m²
	TOTAL =	**3078 m²**
B) 1.	CAFE INDOOR	228 m²
2.	CAFE OUTSIDE	162 m²
3.	KIDS PLAYGROUND	197 m²
	TOTAL =	**587 m²**
C) 1.	OPEN NURSERY	3068 m²
2.	POTS ZONE	720 m²
3.	SERVICE DRIVEWAY	592 m²
	TOTAL =	**4380 m²**
D) 1.	STORAGE	335 m²
2.	STAFF ZONE	110 m²
3.	AMENITIES	35 m²
4.	PLANT STORAGE	82 m²
5.	LOADING DOCK	410 m²
6.	PLANT AREA	36 m²
	TOTAL =	**1008 m²**
E) 1.	LANDSCAPE ZONE	1275 m²
2.	LANDSCAPE SHOP	272 m²
3.	LANDSCAPE BINS	480 m²
	TOTAL =	**2027 m²**
F) 1.	TENANCY SPACES	1844 m²
2.	TENANCY LOADING	46m²
3.	AMENITIES	35m²
	TOTAL =	**1925 m²**
A) 1.	PLANT	495 m²
2.	BASEMENT PARKING	5570 m²
	TOTAL =	**6065 m²**

Parking Schedule

ACCESSIBLE CAR SPACES	8
CAR SPACES	250
TOTAL	258

LOCATION	AREA	%
SITE COVERAGE	8579m²	30%
TOTAL =	**8579 m²**	**30%**
SOUTH BOUNDARY LANDSCAPING	642 m²	2%
MONA VALE ROAD LANDSCAPING	1775 m²	6%
COOYONG ROAD LANDSCAPING	1525 m²	5%
INTERNAL LANDSCAPING	990 m²	4%
OPEN NURSERY	3465 m²	12%
TOTAL =	**8397 m²**	**29%**
DRIVEWAYS/ HARD SURFACE	**11323 m²**	**40%**
TOTAL SITE AREA =	**28,299 m²**	

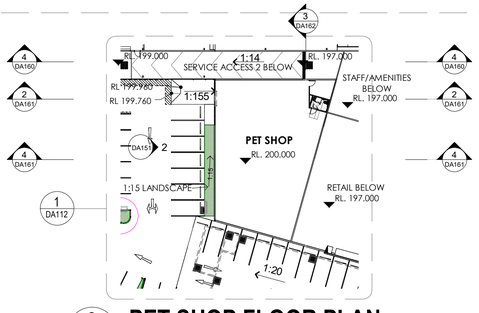
PARKING	NO.
BASEMENT PARKING	203
BASEMENT DISABLED	2
GF PARKING	179
GF DISABLED	6
TOTAL =	**382**
TOTAL DISABLED =	**8**

LEGEND:

TO BE DEMOLISHED

EXISTING TREES TO BE RETAINED

TREES TO BE REMOVED



2 DA150 **PET SHOP FLOOR PLAN**
Scale: 1 : 500

flowerpower

OVERALL FLOOR PLAN

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WEB: www.lefflersimes.com.au BRISBANE L5 U39 131 LEICHHARDT ST, SPRING HILL, QLD 4000 T:+61 7 31235544

SCALE 1:500 (0 10 20 30 40 50)

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
DATE: 10/11/21 DA100 A
DRAWN: TJT/CSG

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EXISTING OPEN NURSERY AREA
AWNING OVER IN DOTTED LINES
CLERESTORY WINDOWS/GLAZING OVER IN DOTTED LINES
OUTDOOR KIDS PLAY AREA
RL. 199.500
STORM WATER PIT/TRENCH DRAIN TO CIVIL ENG. DETAILS
SPEAR TOP GATE (DOUBLE) WITH SIGNAGE 'FOR SERVICE USE ONLY-NO PEDESTRIAN ACCESS'
KITCHEN STORE
RL. 199.000
SERVERY
RL. 199.000
SEATING
RL. 199.000
CAFE
RL. 199.000
SEATING
RL. 198.479
RL. 199.000
1:14 RAMP
LANDING
STAIR
RL. 197.000
1:14 ACCESSIBLE RAMP
RL. 197.536
RL. 198.071
SERVICE ACCESS 2
(FORKLIFT RAMP)
RL. 199.000
RL. 197.000
STAFF OFFICE
RL. 197.000
FEMALE
MALE
STAFF FEMALE
STAFF MALE
ACC. TOILET
CLEREST/ STORY/ ROOF ACCESS
P.L.R.
STORE
RL. 197.000
(PET SHOP OVER @ RL 200.000)
RL. 197.000
RETAIL
RL. 197.000
P.O.S.
EXISTING GARDEN CENTRE
RL. 197.000 -EXISTING
ENTRY
RL. 197.000
ENTRY STATEMENT/SIGN
AWNING OVER IN DOTTED LINES
FRUIT SHOP
RL. 200.500
SPEAR TOP GATE (DOUBLE) WITH SIGNAGE 'FOR SERVICE USE ONLY-NO PEDESTRIAN ACCESS'
RL 200.400
RL. 200.500
RL 200.229
RL 199.700
RL 200.000
LANDSCAPING
TROLLEY BAYS
GUARD RAIL
RL 198.725
BOUNDARY
NEW 1:4 BATTER LANDSCAPE SHADED IN DARK GREEN
STORMWATER OSD BELOW IN DOTTED LINES AS PER CIVIL DRAWINGS.
RL 195.300
SOUTH BOUNDARY LANDSCAPING
308°40'58" 259.25
305°34'23" 26.45
203°07'58" 120.03
HYD
TEL
BW LOG
PP
SWP
GA

LEGEND:

TO BE DEMOLISHED

EXISTING TREES TO BE RETAINED

TREES TO BE REMOVED

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FLOOR PLAN - 1 OF 3

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SCALE 1:200

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

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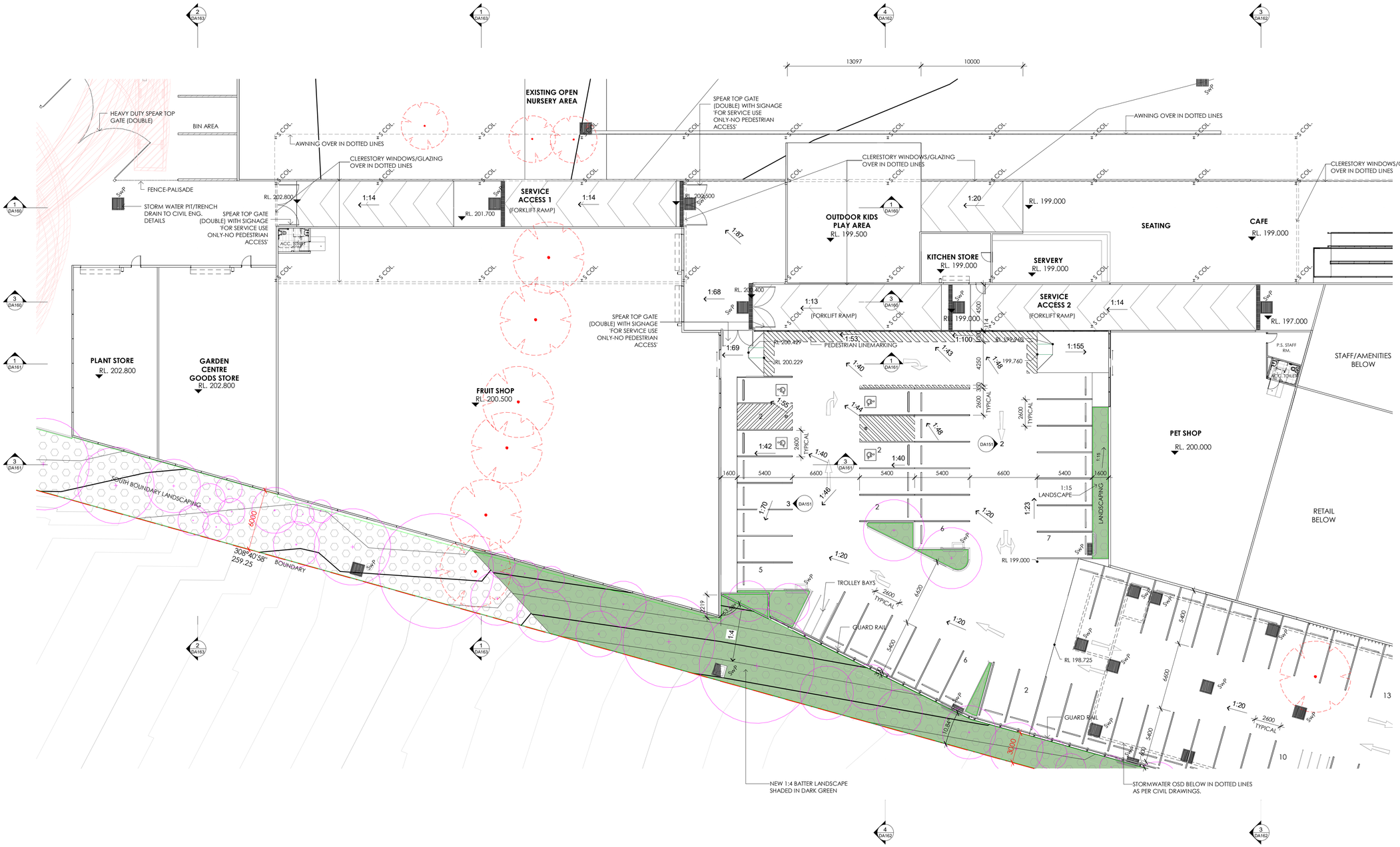
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LEGEND:

- TO BE DEMOLISHED
- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED

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FLOOR PLAN - 2 OF 3

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BRISBANE L5 U39 131 LEICHHARDT ST, SPRING HILL, QLD 4000 T:+61 7 31235544

SCALE 1:200 (0 4 8 12 16 20)

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LEGEND:

- TO BE DEMOLISHED
- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED

MYOORA ROAD

LANDSCAPE SHOP RL. 203.400

OPEN BULKY GOODS DISPLAY AREA

BIN AREA

BIN AREA

BIN AREA

EXISTING BUS STOP + AWNING

BUS STOP

BOUNDARY 113°05'58" 248.32

BOUNDARY 23°08'58" 71.59

BOUNDARY 308°10'58" 259.25

SOUTH BOUNDARY LANDSCAPING

6000

10000

AWNING OVER IN DOTTED LINES

HEAVY DUTY SPEAR TOP GATE (DOUBLE)

FENCE-PALISADE

BOOM GATE

ACCESS CONTROL CARD READER/INTERCOM

PEDESTRIAN LINEMARKING

SPEAR TOP GATE (SINGLE), SITE FENCE

EXISTING ELEC'L. POLE

STORM WATER PIT/TRENCH DRAIN TO CIVIL ENG. DETAILS

NEW EXIT

EXISTING

LANDSCAPE

CAR EXIT ONLY- NO PEDESTRIAN ACCESS

TYPICAL

TROLLEY BAYS

1:14 RAMP

1:14 ACCESSIBLE RAMP

RL 201.700

RL 201.460

RL 201.040

RL 201.254

RL 202.251

RL 202.800

RL 204.600

TOW 201.700

TOW 204.600

EXISTING OPEN NURSERY AREA

AWNING OVER IN DOTTED LINES

CLERESTORY WINDOWS/GLAZING OVER IN DOTTED LINES

SERVICE ACCESS 1 (FORKLIFT RAMP)

SPEAR TOP GATE (DOUBLE) WITH SIGNAGE 'FOR SERVICE USE ONLY-NO PEDESTRIAN ACCESS'

PLANT STORE RL. 202.800

GARDEN CENTRE GOODS STORE RL. 202.800

FRUIT SHOP RL. 200.500

1:35 1:32 1:18 1:40 1:50 1:67 1:52 1:44 1:60 1:46 1:25

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FLOOR PLAN - 3 OF 3

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SCALE 1:200

FLOWER POWER GARDEN CENTRE TERREY HILLS
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JOB NO: 4932 DATE: 13/01/22 DRAWN: TJT/CSG

DWG NO. DA113 REV. A

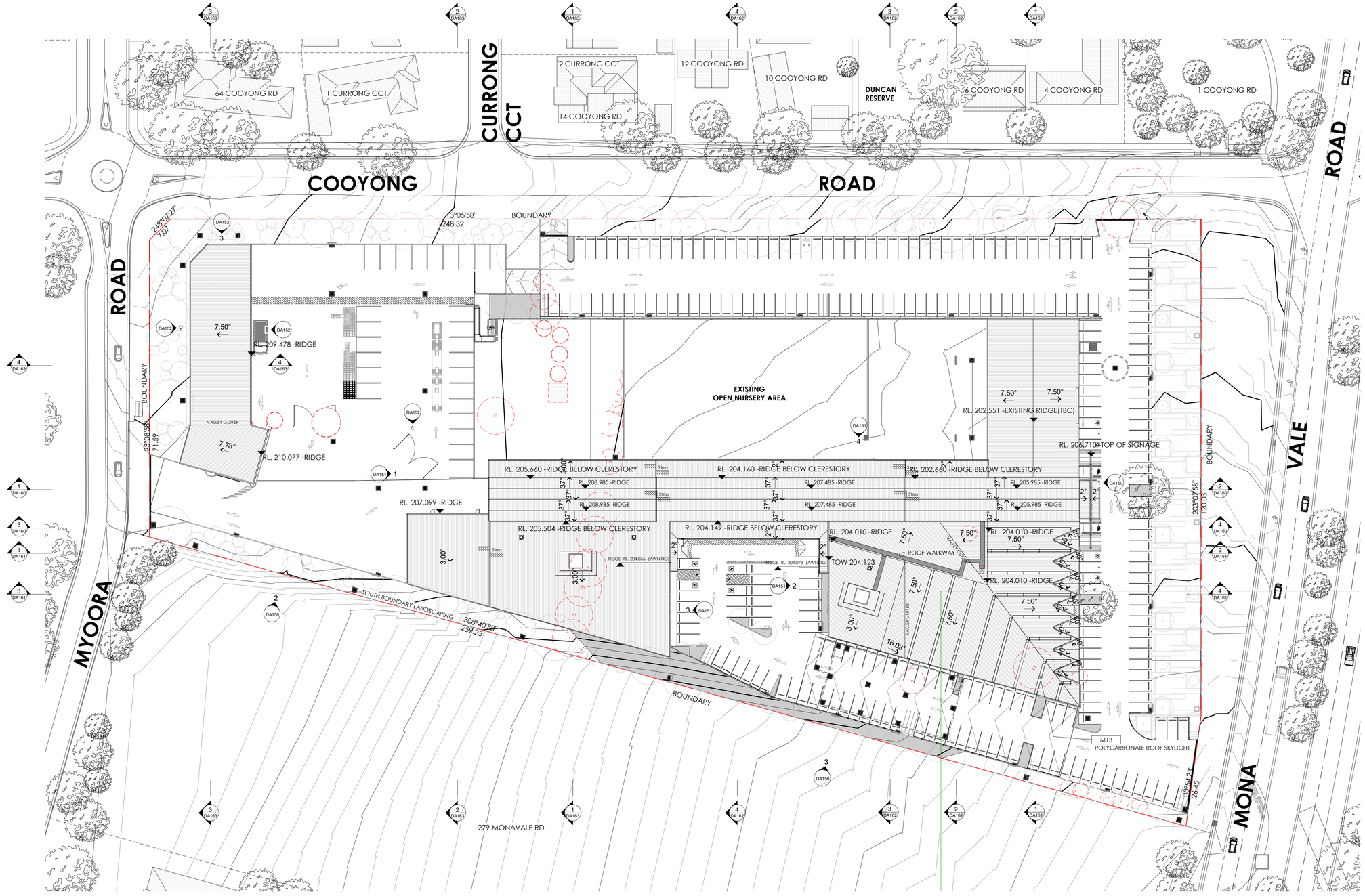
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LEGEND:

- TO BE DEMOLISHED
- EXISTING TREES TO BE RETAINED
- TREES TO BE REMOVED

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OVERALL ROOF PLAN

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SCALE 1:500 (0 10 20 30 40 50)

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DATE: 10/11/21 DRAWN: TJT/CSG
DWG NO. DA120 REV. A

LEFFLER SIMES ARCHITECTS

FINISHES SCHEDULE

REFERENCE		TYPE	SELECTION	
M01	Wall type 1	FC sheet	Cemintel Surround Secondary 2 BR1-C light grey	
M02	Wall type 2	FC Sheets with horizontal grooves	Cemintel Territory Woodlands Teak timber shade	
M03	Wall type 3	FC Sheets	Cemintel Barestone Grey texture	
M04	Stone wall 1	Stone tiles	Sandstone irregular shaped finish	
M05	Screen type 1	100 x 50 aluminium sections	Powdercoat Duratec Bronze Pearl Satin 90T8356Q	
M06	Screen type 2	450 x 50 aluminium sections	Powdercoat Duratec Bronze Pearl Satin 90T8356Q	

REFERENCE		TYPE	SELECTION	
M07	Planter Box	Concrete	Painted finished	
M08	Metal framing 1 around FP entry	Steel members	Paint finish Dulux Pewter Frame SN4H6	
M09	Window frames 1 Fruit Shop building & other building	Aluminium frames	Powdercoat Duratec Bronze Pearl Satin 90T8356Q	
M10	Window frames 2 Flower Power building	Aluminium frames	Powdercoat Duratec Nickel Pearl Matt 90T7763Q	
M11	Glass	As required thicknesses	Clear glass	
M12	Roof deck	Steel deck - min 2 deg roof pitch	Custom Orb Colorbond Evening Haze	

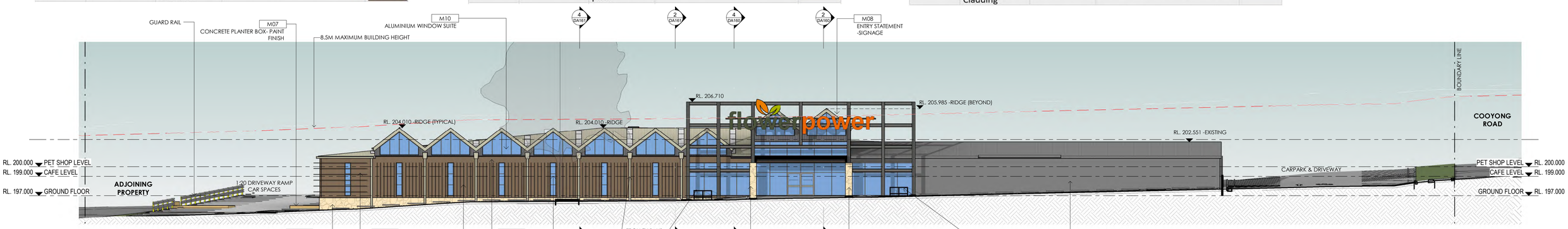
REFERENCE		TYPE	SELECTION	
M13	Roof Skylight	Polycarbonate	Danpal 600w Polycarbonate clear	
M14	Gutters	As documented	Colorbond Evening Haze	
M15	Downpipes	As documented	Colorbond Evening Haze	
M16	Palisade fence	Metal	Powdercoat Duralloy Wallaby Satin 2607474S	
M17	Roof Plant Screen Wall	Aluminium	Powdercoat Aluminium Screen Wall - Windspray	
M18A	Precast walls	Precast concrete panels	Paint Finish 1 Dulux Dieskau SN4H1 Matt	
M18B	Precast walls	Precast concrete panels	Paint Finish 2 Dulux Garden Picket S15F3 Matt	
M19	Vertical Wall Cladding	Metal	Colorbond Metal Wall Cladding	

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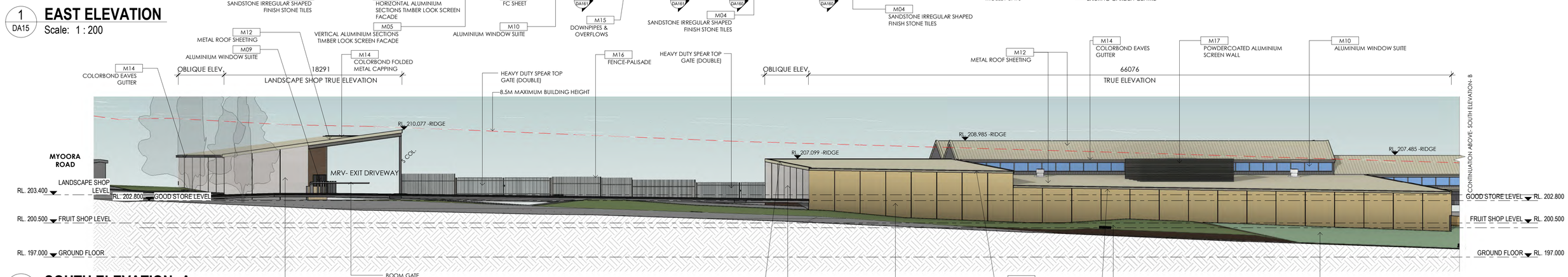
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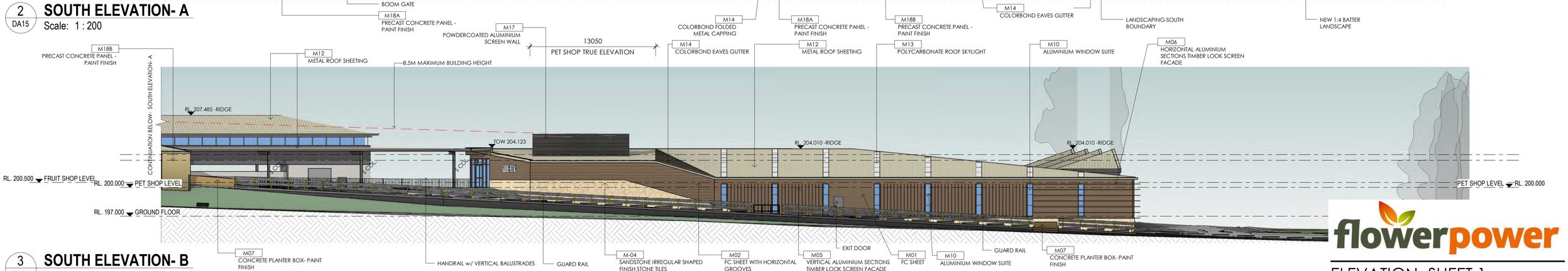
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1 DA15 **EAST ELEVATION**
Scale: 1 : 200



2 DA15 **SOUTH ELEVATION- A**
Scale: 1 : 200



3 DA15 **SOUTH ELEVATION- B**
Scale: 1 : 200

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ELEVATION- SHEET 1

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SCALE 1:200 (0 4 8 12 16 20)

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JOB NO: 4932 DWG NO. DA150 REV. A
DATE: 10/11/21
DRAWN: TJT/CSG

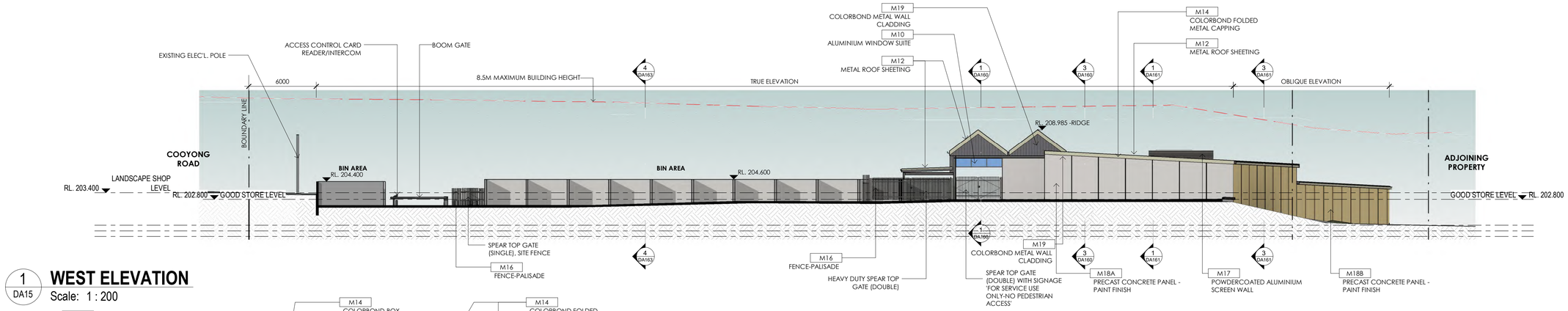
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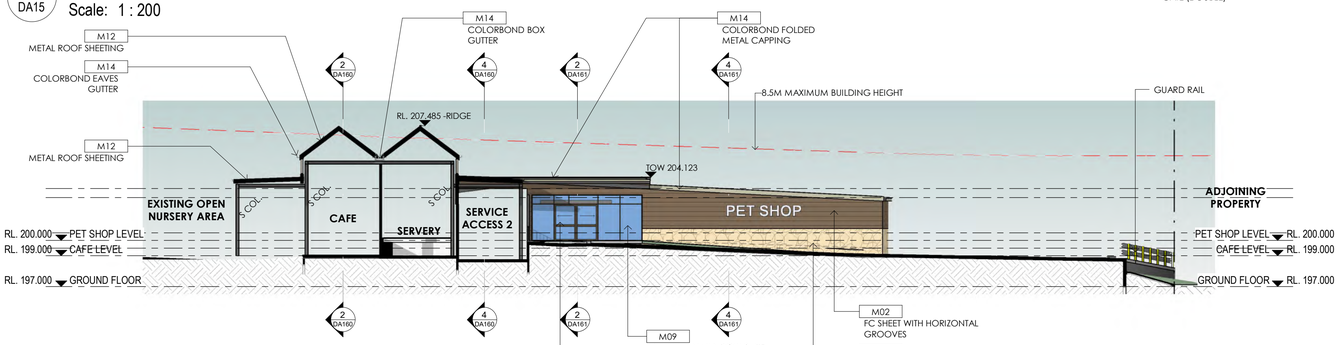
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1 DA15 WEST ELEVATION

Scale: 1 : 200



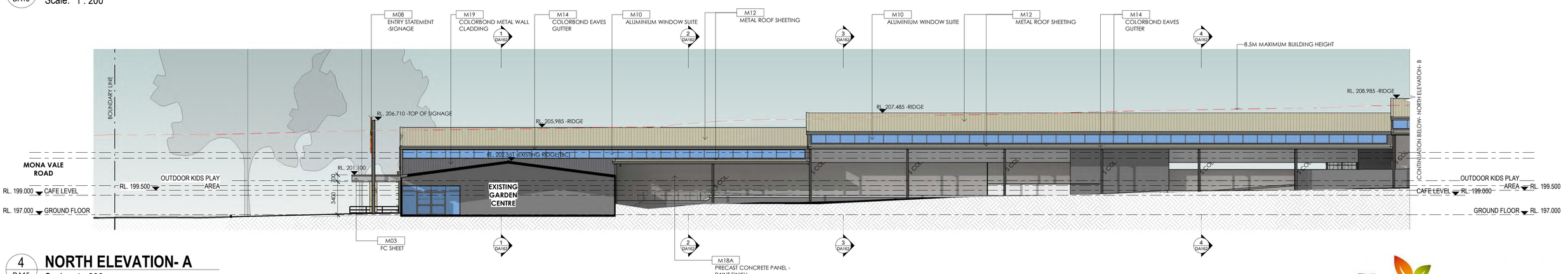
2 DA15 WEST ELEVATION- PET SHOP

Scale: 1 : 200



3 DA15 EAST ELEVATION- FRUIT SHOP

Scale: 1 : 200



4 DA15 NORTH ELEVATION- A

Scale: 1 : 200

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ELEVATION- SHEET 2

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SCALE 1:200 (0 4 8 12 16 20)

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
DATE: 10/11/21 DA151 A
DRAWN: TJT/CSG

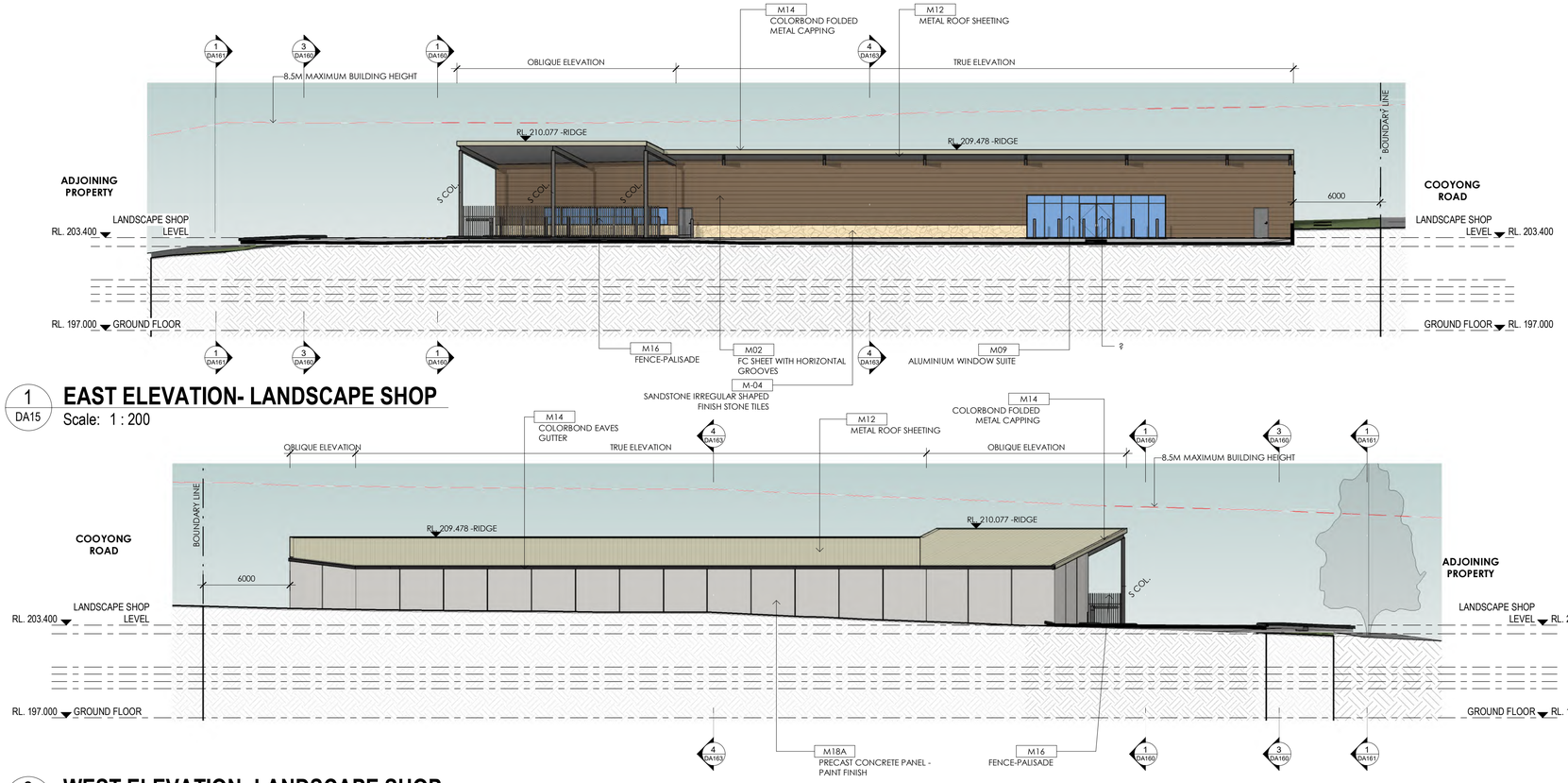
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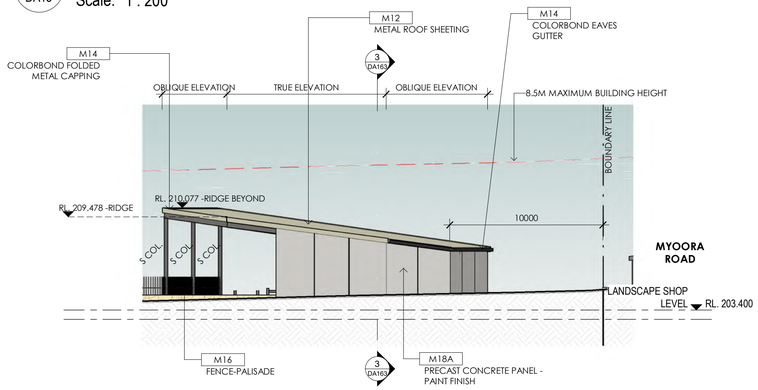


1 DA15 EAST ELEVATION- LANDSCAPE SHOP

Scale: 1 : 200

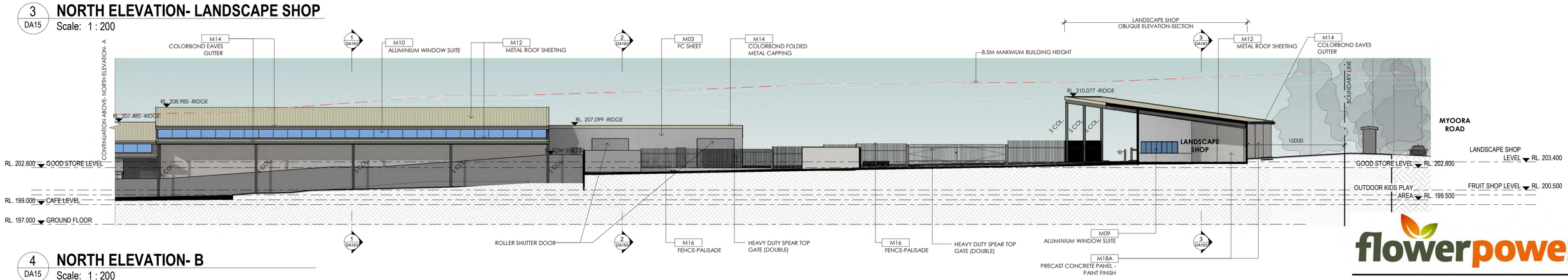
2 DA15 WEST ELEVATION- LANDSCAPE SHOP

Scale: 1 : 200



3 DA15 NORTH ELEVATION- LANDSCAPE SHOP

Scale: 1 : 200



4 DA15 NORTH ELEVATION- B

Scale: 1 : 200

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ELEVATION- SHEET 3

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SCALE 1:200 (0 4 8 12 16 20)

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
DATE: 04/03/23 DA152 A
DRAWN: Author

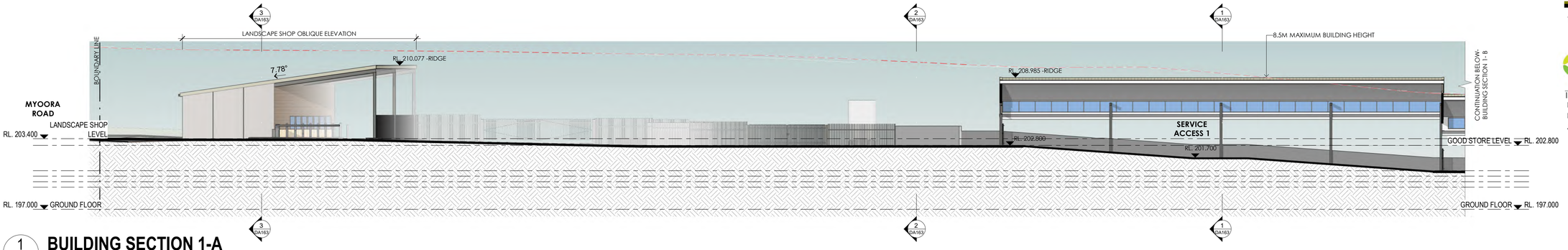
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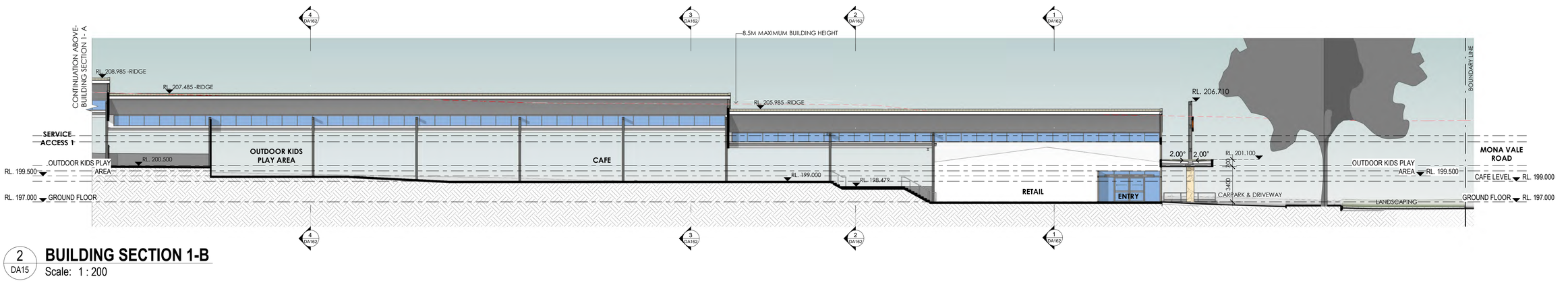
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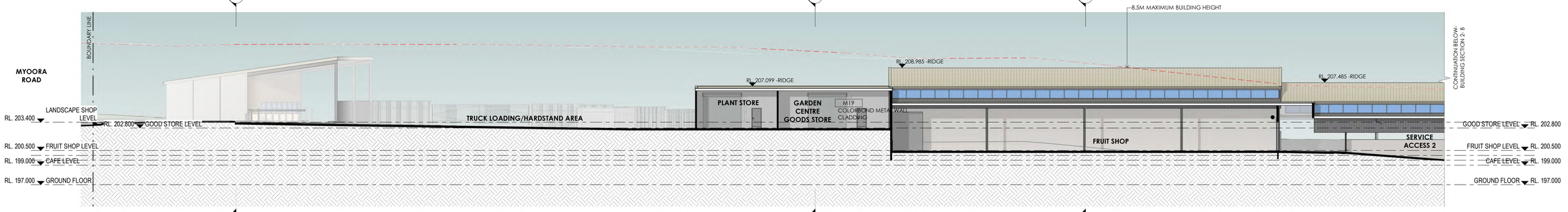
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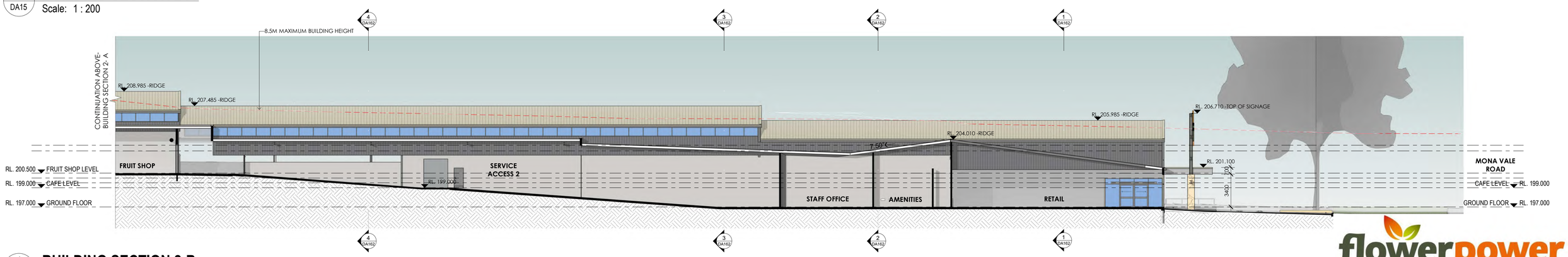
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Scale: 1 : 200



2 DA15 **BUILDING SECTION 1-B**
Scale: 1 : 200



3 DA15 **BUILDING SECTION 2-A**
Scale: 1 : 200



4 DA15 **BUILDING SECTION 2-B**
Scale: 1 : 200

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FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
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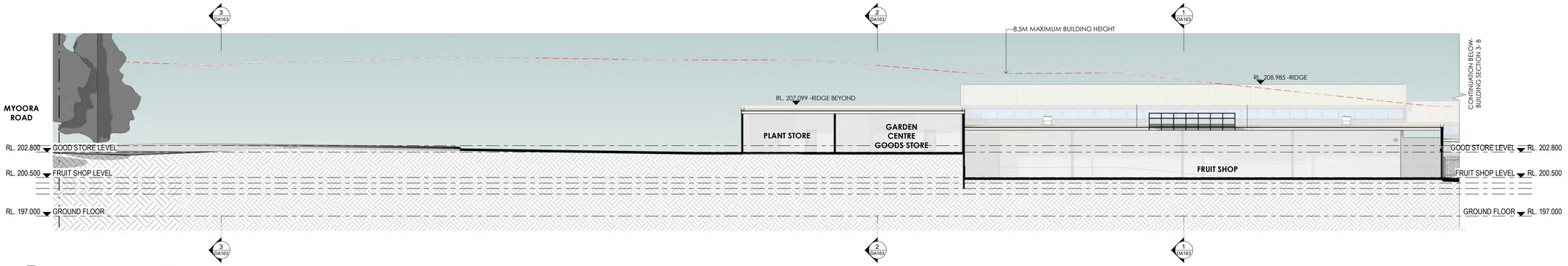
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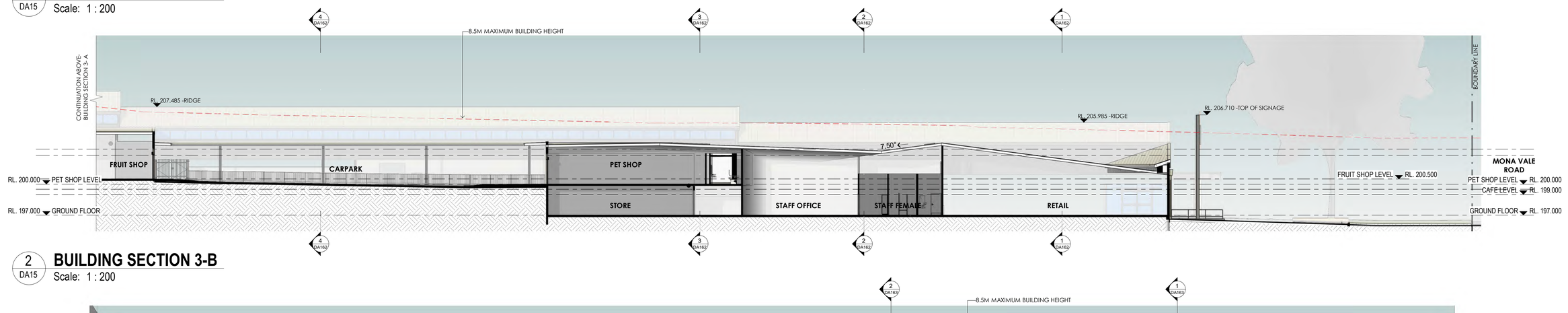
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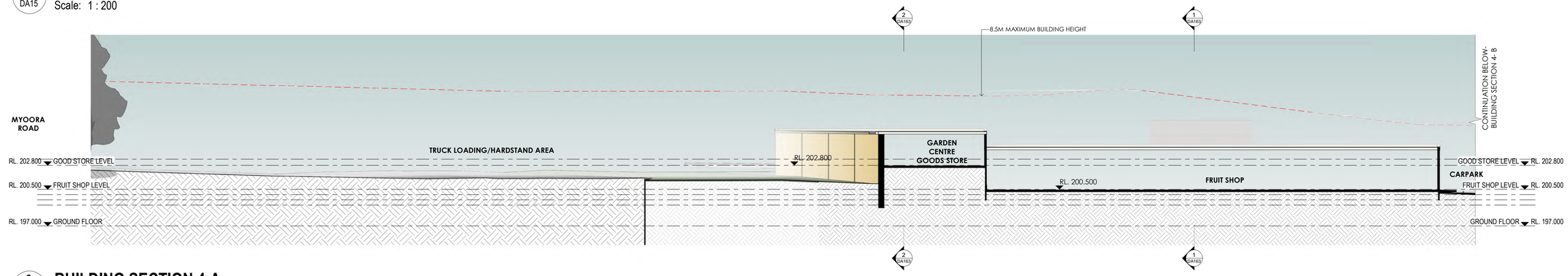
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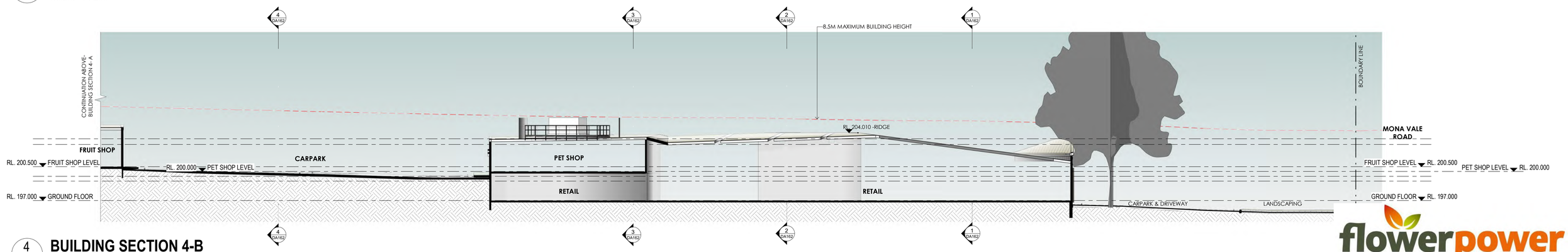
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Scale: 1 : 200



3 DA15 BUILDING SECTION 4-A

Scale: 1 : 200



4 DA15 BUILDING SECTION 4-B

Scale: 1 : 200

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SECTIONS- SHEET 2

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0 4 8 12 16 20 SCALE 1:200

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DWG NO. REV.
DATE: 09/12/21 DA161 A
DRAWN: TJT/CSG

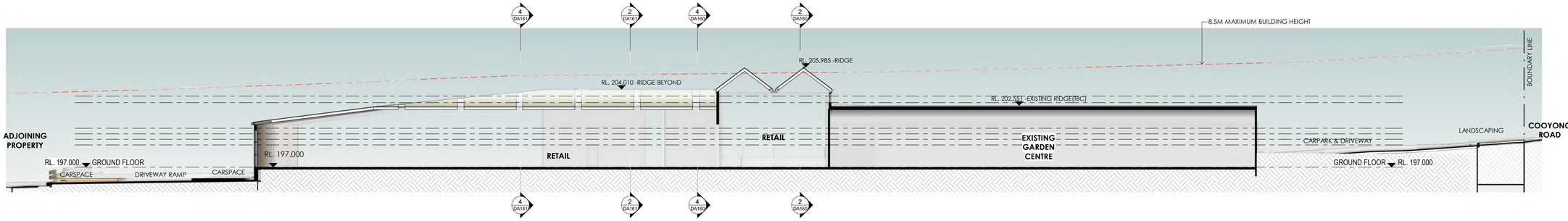
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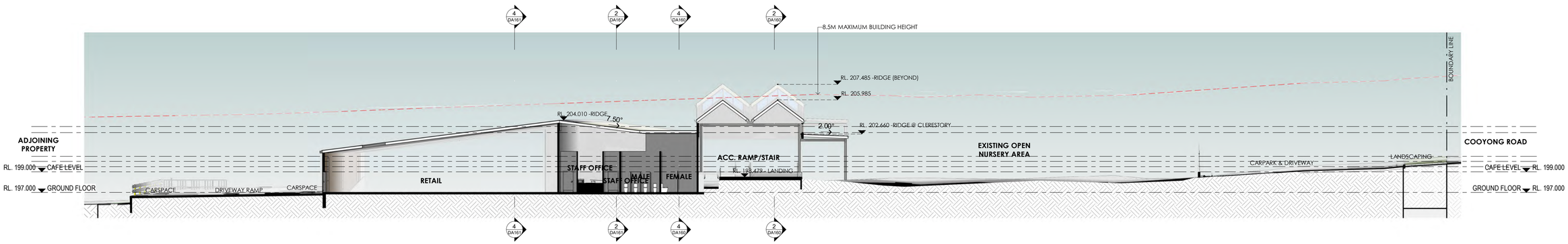
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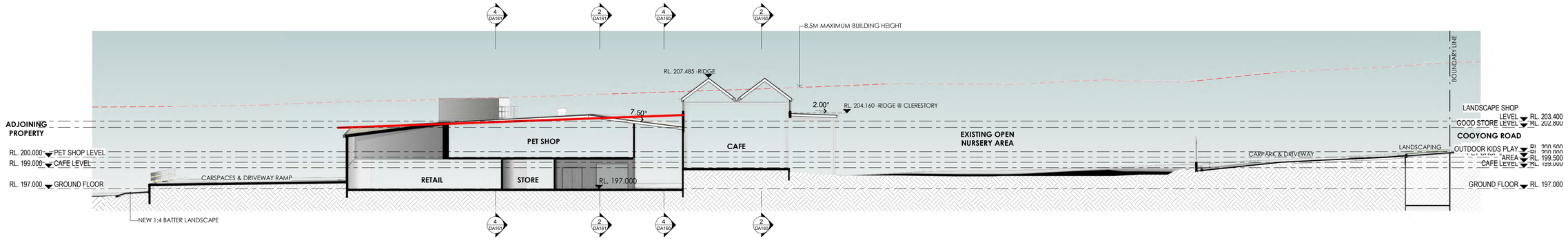
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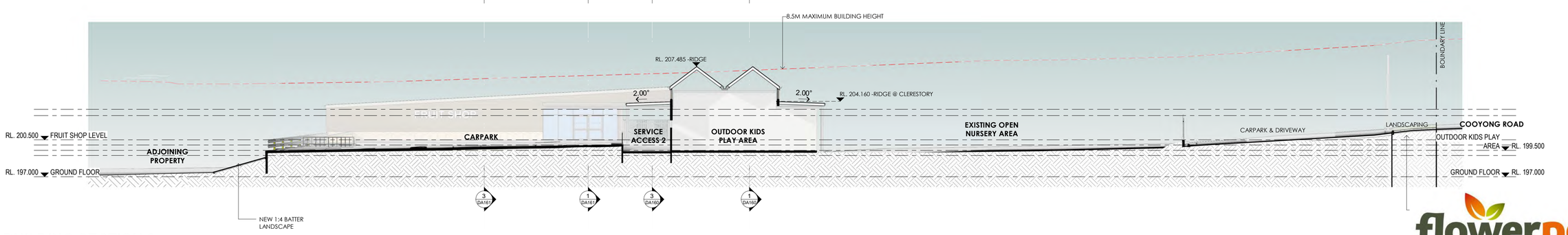
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Scale: 1 : 200



3 DA15 BUILDING SECTION 7

Scale: 1 : 200



4 DA15 BUILDING SECTION 8

Scale: 1 : 200

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SCALE 1:200

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JOB NO: 4932 DWG NO. REV.
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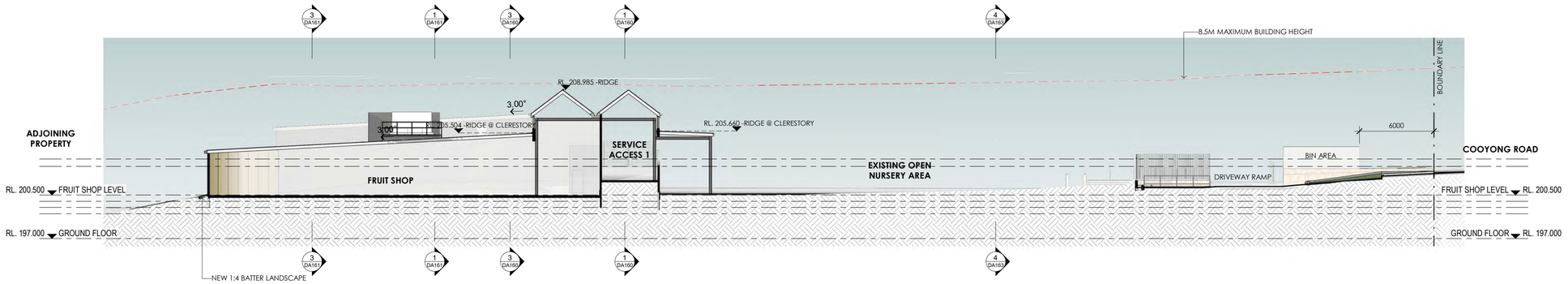
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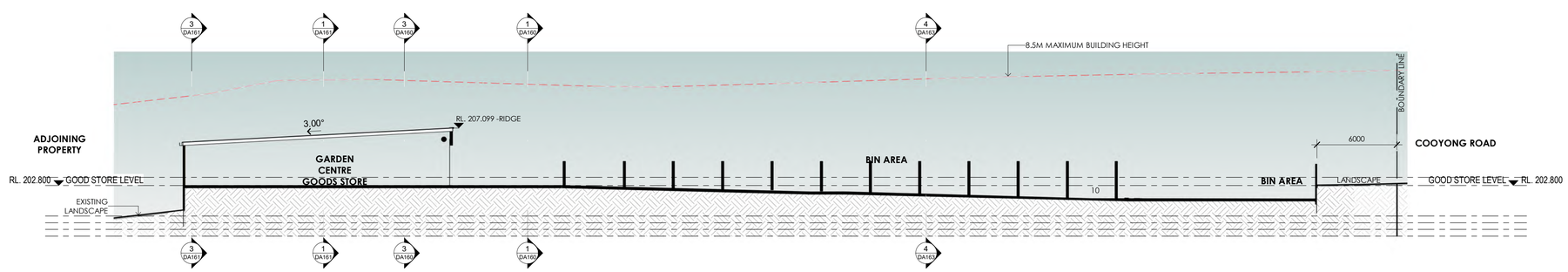
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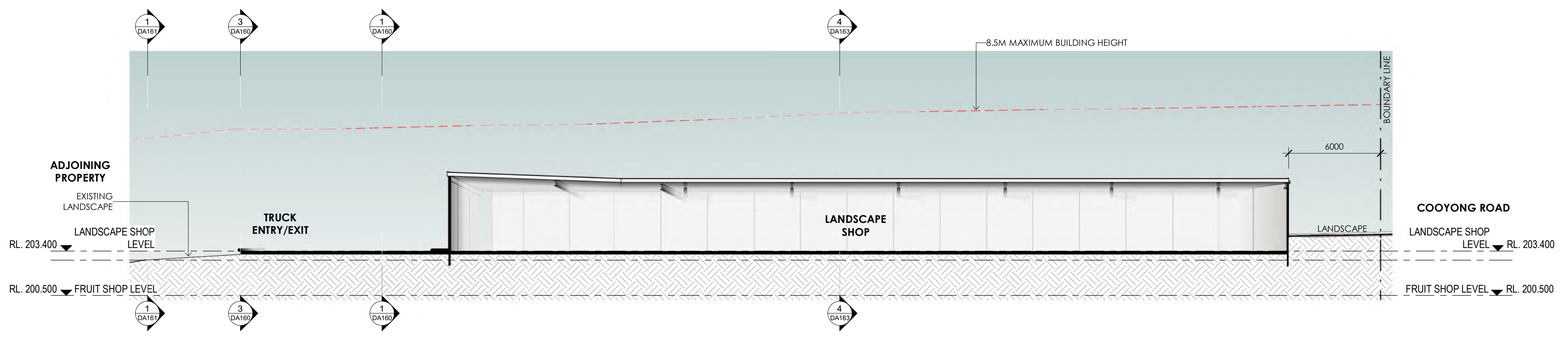
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Scale: 1 : 200



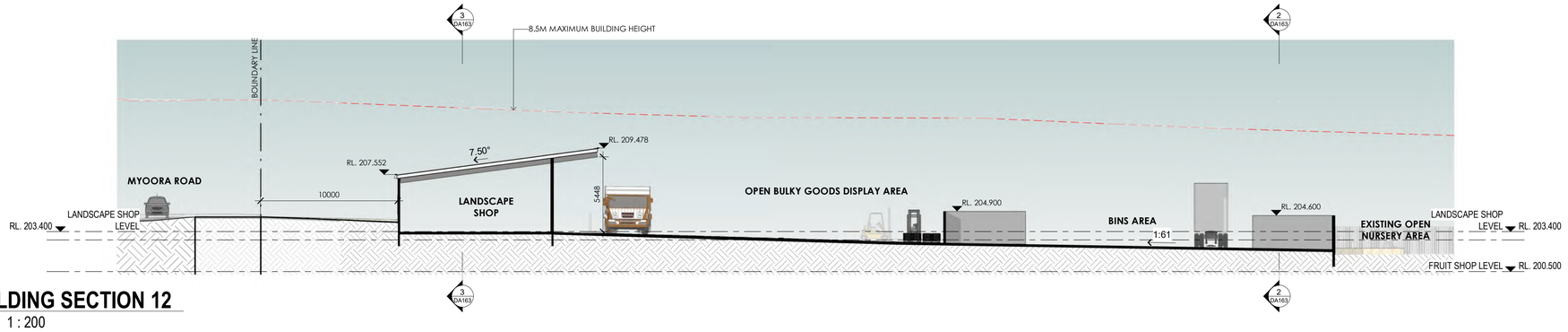
2 DA15 BUILDING SECTION 10

Scale: 1 : 200



3 DA15 BUILDING SECTION 11

Scale: 1 : 200



4 DA15 BUILDING SECTION 12

Scale: 1 : 200

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SCALE 1:200 (0 4 8 12 16 20)

FLOWER POWER GARDEN CENTRE TERREY HILLS
277 MONA VALE RD, TERREY HILLS NSW

JOB NO: 4932 DATE: 03/31/23 DRAWN: Author
DWG NO. DA163 REV. A

LEFFLER SIMES ARCHITECTS

Appendix C: Laboratory Results Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration
ACM:	Asbestos Containing Material
ADWG:	AustralianDrinking Water Guidelines
AF:	Asbestos Fines
ANZG	Australian and New Zealand Guidelines
B(a)P:	Benzo(a)pyrene
CEC:	Cation Exchange Capacity
CRC:	Cooperative Research Centre
CT:	Contaminant Threshold
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
GIL:	Groundwater Investigation Levels
GSW:	General Solid Waste
HILs:	Health Investigation Levels
HSLs:	Health Screening Levels
HSL-SSA:	Health Screening Level-SiteSpecific Assessment
kg/L	kilograms per litre
NA:	Not Analysed
NC:	Not Calculated
NEPM:	National Environmental Protection Measure
NHMRC:	National Health and Medical Research Council
NL:	Not Limiting
NSL:	No Set Limit
OCP:	Organochlorine Pesticides
OPP:	Organophosphorus Pesticides
PAHs:	Polycyclic Aromatic Hydrocarbons
%w/w:	weight per weight
ppm:	Parts per million
PCBs:	Polychlorinated Biphenyls
PCE:	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
pH_{KCL} :	pH of filtered 1:20, 1M KCL extract, shaken overnight
pH_{ox} :	pH of filtered 1:20 1M KCl after peroxide digestion
PQL:	Practical Quantitation Limit
RS:	Rinsate Sample
RSL:	Regional Screening Levels
RSW:	Restricted Solid Waste
SAC:	Site Assessment Criteria
SCC:	Specific Contaminant Concentration
S_{Cr}:	Chromium reducible sulfur
S_{POS}:	Peroxide oxidisable Sulfur
SSA:	Site Specific Assessment
SSHSLs:	Site Specific Health Screening Levels
TAA:	Total Actual Acidity in 1M KCL extract titrated to pH6.5
TB:	Trip Blank
TCA:	1,1,1 Trichloroethane (methyl chloroform)
TCE:	Trichloroethylene (Trichloroethene)
TCLP:	Toxicity Characteristics Leaching Procedure
TPA:	Total Potential Acidity, 1M KCL peroxide digest
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
TSA:	Total Sulfide Acidity (TPA-TAA)
UCL:	Upper Level Confidence Limit on Mean Valu
USEPA	United States Environmental Protection Agency
VOCC:	Volatile Organic Chlorinated Compounds
WHO:	World Health Organisation

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).
- Statistical calculations are undertaken using ProUCL (USEPA). Statistical calculation is usually undertaken using data from fill samples.

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with high traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

QA/QC Table:

- Field blank, Inter and Intra laboratory duplicate results are reported in mg/kg.
- Trip spike results are reported as percentage recovery.
- Field rinsate results are reported in µg/L.

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TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-D: 'Commercial/Industrial'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	Phenoxy acid herbicides	Carbamates	Synthetic pyrethroids	ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos					
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5 to 2	0.5	0.t to 2	100
Site Assessment Criteria (SAC)			3000	900	3600	240000	1500	730	6000	400000	4000	40	80	2000	2500	45	530	3600	50	2000	7	PQL	<PQL	<PQL	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																							
BH101	0.07-0.2	Fill: silty gravelly sand	<4	<0.4	**19**	**56**	**5**	<0.1	**66**	**37**	**1.1**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH101	0.07-0.2	Lab duplicate	<4	<0.4	**18**	**52**	**4**	<0.1	**62**	**37**	**0.3**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH101	0.5-0.95	Fill: sandy clay	<4	<0.4	**39**	**15**	**6**	<0.1	**47**	**31**	**36**	**3.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH101	1.5-1.95	Fill: sandy clay	<4	<0.4	**31**	**12**	**17**	<0.1	**24**	**33**	**2.3**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
BH101	2.5-2.8	Fill: sandy clay	<4	<0.4	**26**	**11**	**12**	<0.1	**23**	**38**	**3.4**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH101	3.0-3.4	Fill: sandy clay	**7**	<0.4	**40**	**15**	**28**	**0.1**	**17**	**56**	**0.72**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH102	0-0.2	Fill: gravelly silty sand	<4	<0.4	**14**	**14**	**14**	<0.1	**9**	**69**	**31**	**4.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH102	0.5-0.7	Gravelly sandy clay	**6**	<0.4	**30**	**9**	**8**	<0.1	**5**	**26**	**1.8**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH103	0-0.1	Fill: silty clayey sand	<4	<0.4	**21**	**7**	**6**	<0.1	**15**	**55**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH104	0-0.2	Fill: gravelly silty sand	<4	<0.4	**12**	**44**	**25**	<0.1	**20**	**77**	**61**	**8.2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Detected
BH104	0.2-0.5	Silty clayey sand	<4	<0.4	**25**	**<1**	**3**	<0.1	**<1**	**1**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH105	0-0.1	Fill: silty gravelly sand	<4	<0.4	**6**	**43**	**3**	<0.1	**66**	**28**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH105	0-0.1	Lab duplicate	<4	<0.4	**6**	**45**	**3**	<0.1	**65**	**29**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH105	0.1-0.5	Fill: silty sand	<4	<0.4	**10**	**2**	**4**	<0.1	**5**	**7**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH106	0-0.1	Fill: silty gravelly sand	<4	<0.4	**11**	**24**	**18**	<0.1	**11**	**60**	**5.7**	**1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Detected
BH106	0.5-0.95	Fill: silty sand	<4	<0.4	**3**	**1**	**10**	<0.1	**<1**	**6**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH106	1.8-2.0	Gravelly silty sand	**7**	<0.4	**42**	**<1**	**3**	<0.1	**<1**	**<1**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH107	0.1-0.2	Fill: gravelly silty sand	<4	<0.4	**27**	**<1**	**6**	<0.1	**2**	**3**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH107	0.7-1.0	Silty sand	<4	<0.4	**39**	**<1**	**5**	<0.1	**<1**	**<1**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH108	0.1-0.2	Fill: silty sand	<4	<0.4	**20**	**3**	**8**	<0.1	**8**	**81**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH108	0.4-0.5	Fill: silty sandy clay	**4**	<0.4	**22**	**3**	**15**	<0.1	**4**	**42**	**0.2**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH108	0.7-1.0	Silty sand	<4	<0.4	**16**	**<1**	**4**	<0.1	**2**	**16**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH109	0.2-0.41	Fill: silty clay	<4	<0.4	**28**	**21**	**6**	<0.1	**43**	**25**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH109	0.2-0.41	Lab duplicate	<4	<0.4	**29**	**19**	**6**	<0.1	**52**	**29**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH110	0.09-0.4	Fill: silty clayey sand	<4	<0.4	**65**	**33**	**7**	<0.1	**78**	**47**	**0.1**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH110	1.0-1.4	Fill: silty sandy clay	<4	<0.4	**28**	**15**	**64**	<0.1	**27**	**67**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
BH111	0.05-0.4	Fill: silty clayey gravel	<4	<0.4	**49**	**47**	**9**	<0.1	**84**	**49**	**0.1**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH111	0.4-0.6	silty clayey sand	<4	<0.4	**14**	**2**	**8**	<0.1	**10**	**19**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH112	0.08-0.3	Fill: silty gravelly sand	<4	<0.4	**51**	**16**	**6**	<0.1	**64**	**29**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH113	0.18-0.5	silty sandy clay	<4	<0.4	**14**	**4**	**4**	<0.1	**4**	**9**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<PQL	<PQL	<PQL	Not Detected
BH113	0.18-0.5	Lab duplicate	<4	<0.4	**14**	**3**	**5**	<0.1	**4**	**11**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH114	0.23-0.4	Fill: silty clayey sand	<4	<0.4	**17**	**<1**	**3**	<0.1	**2**	**3**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH114	0.4-0.7	silty clayey sand	**4**	<0.4	**31**	**13**	**10**	<0.1	**23**	**47**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH115	0.16-0.4	Fill: silty gravelly sand	**7**	<0.4	**40**	**2**	**6**	<0.1	**9**	**13**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH116	0.21-0.55	gravelly sandy clay	**5**	<0.4	**50**	**<1**	**4**	<0.1	**10**	**1**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH117	0.12-0.3	Fill: gravelly silty sand	**10**	<0.4	**22**	**5**	**8**	<0.1	**20**	**18**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<PQL	<PQL	<PQL	Not Detected
BH117	0.3-0.7	Fill: silty gravelly sand	**22**	<0.4	**62**	**<1**	**7**	<0.1	**6**	**3**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH118	0.1-0.3	Fill: silty sand	**4**	<0.4	**9**	**4**	**6**	<0.1	**6**	**30**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH118	0.3-0.7	Silty clayey sand	**7**	<0.4	**25**	**1**	**3**	<0.1	**4**	**5**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH119	0.1-0.4	Fill: silty sand	**13**	<0.4	**21**	**1**	**9**	<0.1	**3**	**11**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH119	0.1-0.4	Lab duplicate	**13**	<0.4	**19**	**2**	**9**	<0.1	**3**	**13**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH120	0-0.2	Fill: silty clayey sand	**5**	<0.4	**26**	**26**	**19**	<0.1	**24**	**61**	**3.1**	**0.7**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH120	0.2-0.5	Fill: silty sand	**10**	<0.4	**46**	**7**	**10**	<0.1	**12**	**17**	**1.1**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH120	0.5-0.6	silty clay	<4	<0.4	**33**	**<1**	**5**	<0.1	**4**	**2**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH121	0-0.4	Fill: silty clayey sand	**9**	<0.4	**25**	**11**	**9**	<0.1	**11**	**24**	**0.5**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH122	0-0.4	Fill: silty clayey sand	**7**	<0.4	**25**	**16**	**15**	<0.1	**14**	**46**	**0.89**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH123	0-0.5	Fill: silty clayey sand	**5**	<0.4	**28**	**36**	**10**	<0.1	**27**	**35**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH124	0-0.3	Fill: silty clayey sand	<4	<0.4	**12**	**46**	**29**	<0.1	**14**	**35**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH124	0-0.3	Lab duplicate	<4	<0.4	**8**	**28**	**9**	<0.1	**16**	**25**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH125	0-0.4	Fill: silty sand	<4	<0.4	**60**	**18**	**7**	<0.1	**47**	**51**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
TP126	0-0.5	Fill: silty sand	<4	<0.4	**22**	**17**	**11**	<0.1	**27**	**40**	**5.4**	**1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<PQL	<PQL	<PQL	Not Detected
TP126	0.6-0.7	silty sand	**5**	<0.4	**17**	**<1**	**3**	<0.1	**2**	**2**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP127	0-0.1	Fill: silty sand	<4	<0.4	**21**	**49**	**39**	<0.1	**21**	**51**	**72**	**10**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
TP127	0.1-0.3	Fill: silty clayey sand	**9**	<0.4	**39**	**10**	**13**	<0.1	**13**	**22**	**2**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
TP127	0.3-0.6	Fill: silty sand	**13**	<0.4	**51**	**34**	**21**	<0.1	**23**	**38**	**0.57**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Detected
TP127	0.6-0.7	silty sand	**6**	<0.4	**15**	**<1**	**3**	<0.1	**3**	**3**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH128	0-0.3	Fill: silty sand	<4	**1**	**12**	**16**	**49**	**0.2**	**8**	**120**	**4.6**	**0.6**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Detected
BH128	0.3-0.45	silty clayey sand	<4	<0.4	**7**	**1**	**7**	<0.1	**3**	**6**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP129	0-0.2	Fill: silty sand	<4	<0.4	**15**	**22**	**16**	<0.1	**14**	**61**	**13**	**2**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
TP129	0-0.2	Lab duplicate	<4	<0.4	**21**	**41**	**18**	<0.1	**21**	**72**	**18**	**2.6**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
TP129	0.2-0.6	Fill: silty clayey sand	**6**	<0.4	**34**	**5**	**8**	<0.1	**8**	**29**	**1.1**	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH130	0-0.3	Fill: silty clayey sand	**18**	<0.4	**48**	**<1**	**8**	<0.1	**2**	**6**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	Not Detected
BH130	0.3-0.5	silty sand	**8**	<0.4	**46**	**<1**	**4**	<0.1	**3**	**<1**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDup101	-	Duplicate	<4	<0.4	**7**	**58**	**3**	<0.1	**96**	**35**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
SDup102	-	Duplicate	<4	<0.4	**23**	**2**	**5**	<0.1	**6**	**6**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
SDup103	-	Duplicate	**5**	<0.4	**26**	**18**	**15**	<0.1	**35**	**45**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
SDup104	-	Duplicate	**7**	<0.4	**28**	**16**	**13**	<0.1	**16**	**39**	**0.4**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA	NA
BH12	0-0.3	Triplicate	<4	<0.4	**19**	**29**	**11**	<0.1	**18**	**34**	**NA**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP129	0-0.2	Triplicate	<4	<0.4	**17**	**27**	**21**	<0.1	**14**	**57**	**NA**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples			69	69	69	69	69	69	69	69	67	67	41	41	41	41	41	41	41	41	41	3	3	3	44
Maximum Value			22	1	65	58	64	0.2	96	120	72	10	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**

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TABLE S2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					HSL-D: COMMERCIAL/INDUSTRIAL							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH101	0.07-0.2	Fill: silty gravelly sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	1
BH101	0.07-0.2	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	1
BH101	0.5-0.95	Fill: sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	1
BH101	1.5-1.95	Fill: sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH101	2.5-2.8	Fill: sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH101	3.0-3.4	Fill: sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH102	0-0.2	Fill: gravelly silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH102	0.5-0.7	Gravelly sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH103	0-0.1	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH104	0-0.2	Fill: gravelly silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH104	0.2-0.5	Silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH105	0-0.1	Fill: silty gravelly sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH105	0-0.1	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH105	0.1-0.5	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH106	0-0.1	Fill: silty gravelly sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH106	0.5-0.95	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH106	1.8-2.0	Gravelly silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH107	0.1-0.2	Fill: gravelly silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	1
BH107	0.7-1.0	Silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	1
BH108	0.1-0.2	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH108	0.4-0.5	Fill: silty sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH108	0.7-1.0	Silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH109	0.2-0.41	Fill: silty clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH109	0.2-0.41	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH110	0.09-0.4	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH110	1.0-1.4	Fill: silty sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH111	0.05-0.4	Fill: silty clayey gravel	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH111	0.4-0.6	silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH112	0.08-0.3	Fill: silty gravelly sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH113	0.18-0.5	silty sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH113	0.18-0.5	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH114	0.23-0.4	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH114	0.4-0.7	silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH115	0.16-0.4	Fill: silty gravelly sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH116	0.21-0.55	gravelly sandy clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH117	0.12-0.3	Fill: gravelly silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH117	0.3-0.7	Fill: silty gravelly sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH118	0.1-0.3	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH118	0.3-0.7	Silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH119	0.1-0.4	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH119	0.1-0.4	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH120	0-0.2	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH120	0.2-0.5	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH120	0.5-0.6	silty clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH121	0-0.4	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH122	0-0.4	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH123	0-0.5	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH124	0-0.3	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH124	0-0.3	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH125	0-0.4	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP126	0-0.5	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP126	0.6-0.7	silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP127	0-0.1	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP127	0.1-0.3	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP127	0.3-0.6	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP127	0.6-0.7	silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH128	0-0.3	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH128	0.3-0.45	silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP129	0-0.2	Fill: silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP129	0-0.2	Lab duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
TP129	0.2-0.6	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH130	0-0.3	Fill: silty clayey sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
BH130	0.3-0.5	silty sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
SDup101	-	Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
SDup102	-	Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<3	<1	0
SDup103	-	Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
SDup104	-	Duplicate	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0
Total Number of Samples					67	67	67	67	67	67	67	67
Maximum Value					<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	1

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**
The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below

HSL SOIL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
BH101	0.07-0.2	Fill: silty gravelly sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH101	0.07-0.2	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH101	0.5-0.95	Fill: sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH101	1.5-1.95	Fill: sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH101	2.5-2.8	Fill: sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH101	3.0-3.4	Fill: sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH102	0-0.2	Fill: gravelly silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH102	0.5-0.7	Gravelly sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH103	0-0.1	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH104	0-0.2	Fill: gravelly silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH104	0.2-0.5	Silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH105	0-0.1	Fill: silty gravelly sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH105	0-0.1	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH105	0.1-0.5	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH106	0-0.1	Fill: silty gravelly sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH106	0.5-0.95	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH106	1.8-2.0	Gravelly silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH107	0.1-0.2	Fill: gravelly silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH107	0.7-1.0	Silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH108	0.1-0.2	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH108	0.4-0.5	Fill: silty sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH108	0.7-1.0	Silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH109	0.2-0.41	Fill: silty clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH109	0.2-0.41	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH110	0.09-0.4	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH110	1.0-1.4	Fill: silty sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH111	0.05-0.4	Fill: silty clayey gravel	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH111	0.4-0.6	silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH112	0.08-0.3	Fill: silty gravelly sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH113	0.18-0.5	silty sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH113	0.18-0.5	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH114	0.23-0.4	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH114	0.4-0.7	silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH115	0.16-0.4	Fill: silty gravelly sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH116	0.21-0.55	gravelly sandy clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH117	0.12-0.3	Fill: gravelly silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH117	0.3-0.7	Fill: silty gravelly sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH118	0.1-0.3	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH118	0.3-0.7	Silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH119	0.1-0.4	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH119	0.1-0.4	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH120	0-0.2	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH120	0.2-0.5	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH120	0.5-0.6	silty clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH121	0-0.4	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH122	0-0.4	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH123	0-0.5	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH124	0-0.3	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH124	0-0.3	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH125	0-0.4	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP126	0-0.5	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP126	0.6-0.7	silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP127	0-0.1	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP127	0.1-0.3	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP127	0.3-0.6	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP127	0.6-0.7	silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH128	0-0.3	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH128	0.3-0.45	silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP129	0-0.2	Fill: silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP129	0-0.2	Lab duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
TP129	0.2-0.6	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH130	0-0.3	Fill: silty clayey sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH130	0.3-0.5	silty sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDup101	-	Duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDup102	-	Duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDup103	-	Duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDup104	-	Duplicate	0m to <1m	Sand	260	NL	3	NL	NL	230	NL

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TABLE S3
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			**COMMERCIAL/INDUSTRIAL**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH101	0.07-0.2	Coarse	<25	<50	**180**	**260**
BH101	0.07-0.2	Coarse	<25	<50	**200**	**300**
BH101	0.5-0.95	Coarse	<25	<50	<100	<100
BH101	1.5-1.95	Coarse	<25	<50	<100	<100
BH101	2.5-2.8	Coarse	<25	<50	<100	<100
BH101	3.0-3.4	Coarse	<25	<50	<100	<100
BH102	0-0.2	Coarse	<25	<50	**310**	**310**
BH102	0.5-0.7	Fine	<25	<50	<100	<100
BH103	0-0.1	Coarse	<25	<50	<100	<100
BH104	0-0.2	Coarse	<25	<50	**260**	**220**
BH104	0.2-0.5	Coarse	<25	<50	<100	<100
BH105	0-0.1	Coarse	<25	<50	<100	<100
BH105	0-0.1	Coarse	<25	<50	<100	<100
BH105	0.1-0.5	Coarse	<25	<50	<100	<100
BH106	0-0.1	Coarse	<25	<50	<100	**110**
BH106	0.5-0.95	Coarse	<25	<50	<100	<100
BH106	1.8-2.0	Coarse	<25	<50	<100	<100
BH107	0.1-0.2	Coarse	<25	<50	<100	<100
BH107	0.7-1.0	Coarse	<25	<50	<100	<100
BH108	0.1-0.2	Coarse	<25	<50	<100	<100
BH108	0.4-0.5	Coarse	<25	<50	<100	<100
BH108	0.7-1.0	Coarse	<25	<50	<100	<100
BH109	0.2-0.41	Coarse	<25	<50	<100	<100
BH109	0.2-0.41	Coarse	<25	<50	<100	**200**
BH110	0.09-0.4	Coarse	<25	<50	<100	<100
BH110	1.0-1.4	Coarse	<25	<50	<100	<100
BH111	0.05-0.4	Coarse	<25	<50	<100	<100
BH111	0.4-0.6	Coarse	<25	<50	<100	<100
BH112	0.08-0.3	Coarse	<25	<50	<100	<100
BH113	0.18-0.5	Coarse	<25	<50	<100	<100
BH113	0.18-0.5	Coarse	<25	<50	<100	<100
BH114	0.23-0.4	Coarse	<25	<50	<100	<100
BH114	0.4-0.7	Coarse	<25	<50	<100	<100
BH115	0.16-0.4	Coarse	<25	<50	<100	<100
BH116	0.21-0.55	Coarse	<25	<50	<100	<100
BH117	0.12-0.3	Coarse	<25	<50	<100	<100
BH117	0.3-0.7	Coarse	<25	<50	<100	<100
BH118	0.1-0.3	Coarse	<25	<50	<100	<100
BH118	0.3-0.7	Coarse	<25	<50	<100	<100
BH119	0.1-0.4	Coarse	<25	<50	<100	<100
BH119	0.1-0.4	Coarse	<25	<50	<100	<100
BH119	0.1-0.4	Coarse	<25	<50	<100	<100
BH120	0-0.2	Coarse	<25	<50	<100	<100
BH120	0.2-0.5	Coarse	<25	<50	<100	<100
BH120	0.5-0.6	Fine	<25	<50	<100	<100
BH121	0-0.4	Coarse	<25	<50	<100	<100
BH122	0-0.4	Coarse	<25	<50	<100	<100
BH123	0-0.5	Coarse	<25	<50	<100	<100
BH124	0-0.3	Coarse	<25	<50	<100	<100
BH124	0-0.3	Coarse	<25	<50	<100	<100
BH125	0-0.4	Coarse	<25	<50	<100	<100
TP126	0-0.5	Coarse	<25	<50	<100	<100
TP126	0.6-0.7	Coarse	<25	<50	<100	<100
TP127	0-0.1	Coarse	<25	<50	**560**	**470**
TP127	0.1-0.3	Coarse	<25	<50	<100	<100
TP127	0.3-0.6	Coarse	<25	<50	<100	<100
TP127	0.6-0.7	Coarse	<25	<50	<100	<100
BH128	0-0.3	Coarse	<25	<50	<100	<100
BH128	0.3-0.45	Coarse	<25	<50	<100	<100
TP129	0-0.2	Coarse	<25	<50	**140**	**100**
TP129	0-0.2	Coarse	<25	<50	**190**	**140**
TP129	0.2-0.6	Coarse	<25	<50	<100	<100
BH130	0-0.3	Coarse	<25	<50	<100	<100
BH130	0.3-0.5	Coarse	<25	<50	<100	<100
SDup101	-	Coarse	<25	<50	<100	<100
SDup102	-	Coarse	<25	<50	<100	<100
SDup103	-	Coarse	<25	<50	<50	<100
SDup104	-	Coarse	<25	<50	<50	<100
Total Number of Samples			67	67	67	67
Maximum Value			<PQL	<PQL	560	470

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Soil Texture**	C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
BH101	0.07-0.2	Coarse	700	1000	3500	10000
BH101	0.07-0.2	Coarse	700	1000	3500	10000
BH101	0.5-0.95	Coarse	700	1000	3500	10000
BH101	1.5-1.95	Coarse	700	1000	3500	10000
BH101	2.5-2.8	Coarse	700	1000	3500	10000
BH101	3.0-3.4	Coarse	700	1000	3500	10000
BH102	0-0.2	Coarse	700	1000	3500	10000
BH102	0.5-0.7	Fine	800	1000	5000	10000
BH103	0-0.1	Coarse	700	1000	3500	10000
BH104	0-0.2	Coarse	700	1000	3500	10000
BH104	0.2-0.5	Coarse	700	1000	3500	10000
BH105	0-0.1	Coarse	700	1000	3500	10000
BH105	0-0.1	Coarse	700	1000	3500	10000
BH105	0.1-0.5	Coarse	700	1000	3500	10000
BH106	0-0.1	Coarse	700	1000	3500	10000
BH106	0.5-0.95	Coarse	700	1000	3500	10000
BH106	1.8-2.0	Coarse	700	1000	3500	10000
BH107	0.1-0.2	Coarse	700	1000	3500	10000
BH107	0.7-1.0	Coarse	700	1000	3500	10000
BH108	0.1-0.2	Coarse	700	1000	3500	10000
BH108	0.4-0.5	Coarse	700	1000	3500	10000
BH108	0.7-1.0	Coarse	700	1000	3500	10000
BH109	0.2-0.41	Coarse	700	1000	3500	10000
BH109	0.2-0.41	Coarse	700	1000	3500	10000
BH110	0.09-0.4	Coarse	700	1000	3500	10000
BH110	1.0-1.4	Coarse	700	1000	3500	10000
BH111	0.05-0.4	Coarse	700	1000	3500	10000
BH111	0.4-0.6	Coarse	700	1000	3500	10000
BH112	0.08-0.3	Coarse	700	1000	3500	10000
BH113	0.18-0.5	Coarse	700	1000	3500	10000
BH113	0.18-0.5	Coarse	700	1000	3500	10000
BH114	0.23-0.4	Coarse	700	1000	3500	10000
BH114	0.4-0.7	Coarse	700	1000	3500	10000
BH115	0.16-0.4	Coarse	700	1000	3500	10000
BH116	0.21-0.55	Coarse	700	1000	3500	10000
BH117	0.12-0.3	Coarse	700	1000	3500	10000
BH117	0.3-0.7	Coarse	700	1000	3500	10000
BH118	0.1-0.3	Coarse	700	1000	3500	10000
BH118	0.3-0.7	Coarse	700	1000	3500	10000
BH119	0.1-0.4	Coarse	700	1000	3500	10000
BH119	0.1-0.4	Coarse	700	1000	3500	10000
BH120	0-0.2	Coarse	700	1000	3500	10000
BH120	0.2-0.5	Coarse	700	1000	3500	10000
BH120	0.5-0.6	Fine	800	1000	5000	10000
BH121	0-0.4	Coarse	700	1000	3500	10000
BH122	0-0.4	Coarse	700	1000	3500	10000
BH123	0-0.5	Coarse	700	1000	3500	10000
BH124	0-0.3	Coarse	700	1000	3500	10000
BH124	0-0.3	Coarse	700	1000	3500	10000
BH125	0-0.4	Coarse	700	1000	3500	10000
TP126	0-0.5	Coarse	700	1000	3500	10000
TP126	0.6-0.7	Coarse	700	1000	3500	10000
TP127	0-0.1	Coarse	700	1000	3500	10000
TP127	0.1-0.3	Coarse	700	1000	3500	10000
TP127	0.3-0.6	Coarse	700	1000	3500	10000
TP127	0.6-0.7	Coarse	700	1000	3500	10000
BH128	0-0.3	Coarse	700	1000	3500	10000
BH128	0.3-0.45	Coarse	700	1000	3500	10000
TP129	0-0.2	Coarse	700	1000	3500	10000
TP129	0-0.2	Coarse	700	1000	3500	10000
TP129	0.2-0.6	Coarse	700	1000	3500	10000
BH130	0-0.3	Coarse	700	1000	3500	10000
BH130	0.3-0.5	Coarse	700	1000	3500	10000
SDup101	-	Coarse	700	1000	3500	10000
SDup102	-	Coarse	700	1000	3500	10000
SDup103	-	Coarse	700	1000	3500	10000
SDup104	-	Coarse	700	1000	3500	10000

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TABLE S4
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		26,000	20,000	27,000	38,000	430	99,000	27,000	81,000	11,000	
Site Use		**COMMERCIAL/INDUSTRIAL - DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
BH101	0.07-0.2	<25	<50	**180**	**260**	<0.2	<0.5	<1	<3	<1	**1**
BH101	0.07-0.2	<25	<50	**200**	**300**	<0.2	<0.5	<1	<3	<1	**1**
BH101	0.5-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**1**
BH101	1.5-1.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH101	2.5-2.8	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH101	3.0-3.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH102	0-0.2	<25	<50	**310**	**310**	<0.2	<0.5	<1	<3	<1	**0**
BH102	0.5-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH103	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH104	0-0.2	<25	<50	**260**	**220**	<0.2	<0.5	<1	<3	<1	**0**
BH104	0.2-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH105	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH105	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH105	0.1-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH106	0-0.1	<25	<50	<100	**110**	<0.2	<0.5	<1	<3	<1	**0**
BH106	0.5-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH106	1.8-2.0	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH107	0.1-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**1**
BH107	0.7-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**1**
BH108	0.1-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH108	0.4-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH108	0.7-1.0	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH109	0.2-0.41	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH109	0.2-0.41	<25	<50	<100	**200**	<0.2	<0.5	<1	<3	<1	**0**
BH110	0.09-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH110	1.0-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH111	0.05-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH111	0.4-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH112	0.08-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH113	0.18-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH113	0.18-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH114	0.23-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH114	0.4-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH115	0.16-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH116	0.21-0.55	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH117	0.12-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH117	0.3-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH118	0.1-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH118	0.3-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH119	0.1-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH119	0.1-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH120	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH120	0.2-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH120	0.5-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH121	0-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH122	0-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH123	0-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH124	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH124	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH125	0-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
TP126	0-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
TP126	0.6-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
TP127	0-0.1	<25	<50	**560**	**470**	<0.2	<0.5	<1	<3	<1	**0**
TP127	0.1-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
TP127	0.3-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
TP127	0.6-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH128	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH128	0.3-0.45	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
TP129	0-0.2	<25	<50	**140**	**100**	<0.2	<0.5	<1	<3	<1	**0**
TP129	0-0.2	<25	<50	**190**	**140**	<0.2	<0.5	<1	<3	<1	**0**
TP129	0.2-0.6	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH130	0-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
BH130	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
SDup101	-	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
SDup102	-	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	**0**
SDup103	-	<25	<50	<50	<100	<0.2	<0.5	<1	<1	<1	**0**
SDup104	-	<25	<50	<50	<100	<0.2	<0.5	<1	<1	<1	**0**
Total Number of Samples		67	67	67	67	67	67	67	67	67	67
Maximum Value		<PQL	<PQL	560	470	<PQL	<PQL	<PQL	<PQL	<PQL	1

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**

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TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HIL-D:Commercial/Industrial

FIELD DATA														
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)
SAC			**No**					**0.05**			**0.001**			**0.001**
30/12/2021	BH101	0-0.05	No	10	11,230	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH101	0.07-0.5	No	10	9,050	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH1101	2-3.5	No	10	7,250	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH102	0-0.5	No	10	9,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH104	0-0.2	No	5	4,760	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH105	0-0.1	No	10	9,650	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH106	0-0.1	No	10	7,490	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH106	0.1-1.5	No	10	13,810	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH107	0.1-0.5	No	10	8,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
30/12/2021	BH108	0.1-1.4	No	10	7,130	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH110	0.09-0.8	No	5	3,520	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH112	0.08-0.3	No	5	4,810	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH115	0.16-0.4	No	5	2,680	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH117	0.12-0.3	No	5	2,860	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH118	0.1-0.3	No	5	2,150	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH119	0.1-0.4	No	5	2,480	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
1/12/2021	BH120	0-0.2	No	5	3,450	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH120	0.2-0.5	No	5	2,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH121	0-0.6	No	5	4,150	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH122	0-0.5	No	5	4,220	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH123	0-0.5	No	5	3,980	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH124	0-0.3	No	5	5,320	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH125	0-0.4	No	5	2,650	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH126	0-0.5	No	10	11,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH127	0-0.1	No	10	10,850	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH127	0.1-0.3	No	10	11,620	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH127	0.3-0.6	No	10	8,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH129	0-0.2	No	10	10,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH129	0.2-0.6	No	10	9,650	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
2/12/2021	BH130	0-0.3	No	5	5,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--
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LABORATORY DATA										
Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
										0.05	**0.001**
284547	BH101	0.07-0.2	1178.41	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH101	0.5-0.95	973.52	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH101	1.5-1.95	703.05	Chrysotile asbestos detected: Amosite asbestos detected: Organic fibres detected	No asbestos detected	1.4104	See Above	0.9593	0.0323	0.1364	0.0046
284547	BH101	2.5-2.8	781.59	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH102	0-0.2	801.51	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH102	0.5-0.7	1079.08	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH103	0-0.1	790.2	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH104	0-0.2	976	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	Chrysotile	–	0.0026	<0.01	<0.001
284547	BH105	0-0.1	1073.75	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH105	0.1-0.5	830.99	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH106	0-0.1	878.71	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	Chrysotile	–	0.0014	<0.01	<0.001
284547	BH106	0.5-0.95	831.15	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH107	0.1-0.2	795.23	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH108	0.1-0.2	921.94	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH108	0.4-0.5	799.68	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH109	0.2-0.41	762.2	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH110	0.09-0.4	829.27	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH110	1.0-1.4	907.06	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	Chrysotile	–	0.0083	<0.01	<0.001
284547	BH111	0.05-0.4	1033.48	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH112	0.08-0.3	843.76	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH113	0.18-0.5	906.69	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH114	0.23-0.4	486.65	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH114	0.4-0.7	855.8	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH115	0.16-0.4	938.9	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH116	0.21-0.55	1062.43	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH117	0.12-0.3	938.18	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH117	0.3-0.7	1130.04	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH118	0.1-0.3	734.28	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH119	0.1-0.4	828.1	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH120	0-0.2	922.4	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH120	0.2-0.5	472.61	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH121	0-0.4	1116.96	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH122	0-0.4	893.66	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH123	0-0.5	947.54	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH124	0-0.3	870.68	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH125	0-0.4	767.28	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	TP126	0-0.5	741.56	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	TP127	0-0.1	953.51	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	TP127	0.1-0.3	996.51	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	TP127	0.3-0.6	907.15	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	Chrysotile:Amosite:Crocidolite	–	0.0056	<0.01	<0.001
284547	BH128	0-0.3	744.82	Chrysotile asbestos detected: Organic fibres detected	No asbestos detected	0.1023	Chrysotile:Amosite:Crocidolite	–	0.0762	<0.01	0.0102
284547	TP129	0-0.2	970.94	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	TP129	0.2-0.6	920.66	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
284547	BH130	0-0.3	890.45	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
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Concentration above the SAC **VALUE**

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TABLE S6
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				COMMERCIAL/INDUSTRIAL																			
							AGED HEAVY METALS-EILs						EILs		ESLs								
				pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	13	28	163	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																				
BH101	0.07-0.2	Fill: silty gravelly sand	Coarse	**9.1**	**22**	**5**	<4	**19**	**56**	**5**	**66**	**37**	<1	<0.1	<25	<50	**180**	**260**	<0.2	<0.5	<1	<3	**0.1**
BH101	0.07-0.2	Lab duplicate	Coarse	**9.1**	**22**	**5**	<4	**18**	**52**	**4**	**62**	**37**	<1	<0.1	<25	<50	**200**	**300**	<0.2	<0.5	<1	<3	**0.08**
BH101	0.5-0.95	Fill: sandy clay	Coarse	NA	NA	NA	<4	**39**	**15**	**6**	**47**	**31**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**2.3**
BH101	1.5-1.95	Fill: sandy clay	Coarse	NA	NA	NA	<4	**31**	**12**	**17**	**24**	**33**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.1**
BH101	2.5-2.8	Fill: sandy clay	Coarse	NA	NA	NA	<4	**26**	**11**	**12**	**23**	**38**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.2**
BH101	3.0-3.4	Fill: sandy clay	Coarse	NA	NA	NA	**7**	**40**	**15**	**28**	**17**	**56**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.07**
BH102	0-0.2	Fill: gravelly silty sand	Coarse	NA	NA	NA	<4	**14**	**14**	**14**	**9**	**69**	<1	<0.1	<25	<50	**310**	**310**	<0.2	<0.5	<1	<3	**3.1**
BH102	0.5-0.7	Gravelly sandy clay	Fine	NA	NA	NA	**6**	**30**	**9**	**8**	**5**	**26**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.2**
BH103	0-0.1	Fill: silty clayey sand	Coarse	NA	NA	NA	<4	**21**	**7**	**6**	**15**	**55**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH104	0-0.2	Fill: gravelly silty sand	Coarse	NA	NA	NA	<4	**12**	**44**	**25**	**20**	**77**	<1	<0.1	<25	<50	**260**	**220**	<0.2	<0.5	<1	<3	**5.6**
BH104	0.2-0.5	Silty clayey sand	Coarse	NA	NA	NA	<4	**25**	<1	**3**	<1	**1**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH105	0-0.1	Fill: silty gravelly sand	Coarse	**8.6**	**13**	**8**	<4	**6**	**43**	**3**	**66**	**28**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH105	0-0.1	Lab duplicate	Coarse	**8.6**	**13**	**8**	<4	**6**	**45**	**3**	**65**	**29**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH105	0.1-0.5	Fill: silty sand	Coarse	NA	NA	NA	<4	**10**	**2**	**4**	**5**	**7**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH106	0-0.1	Fill: silty gravelly sand	Coarse	NA	NA	NA	<4	**11**	**24**	**18**	**11**	**60**	<1	<0.1	<25	<50	<100	**110**	<0.2	<0.5	<1	<3	**0.72**
BH106	0.5-0.95	Fill: silty sand	Coarse	NA	NA	NA	<4	**3**	**1**	**10**	<1	**6**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH106	1.8-2.0	Gravelly silty sand	Coarse	NA	NA	NA	**7**	**42**	<1	**3**	<1	<1	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH107	0.1-0.2	Fill: gravelly silty sand	Coarse	NA	NA	NA	<4	**27**	<1	**6**	**2**	**3**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH107	0.7-1.0	Silty sand	Coarse	NA	NA	NA	<4	**39**	<1	**5**	<1	<1	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH108	0.1-0.2	Fill: silty sand	Coarse	NA	NA	NA	<4	**20**	**3**	**8**	**8**	**81**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH108	0.4-0.5	Fill: silty sandy clay	Coarse	NA	NA	NA	**4**	**22**	**3**	**15**	**4**	**42**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH108	0.7-1.0	Silty sand	Coarse	NA	NA	NA	<4	**16**	<1	**4**	**2**	**16**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH109	0.2-0.41	Fill: silty clay	Coarse	NA	NA	NA	<4	**28**	**21**	**6**	**43**	**25**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH109	0.2-0.41	Lab duplicate	Coarse	NA	NA	NA	<4	**29**	**19**	**6**	**52**	**29**	<1	<0.1	<25	<50	<100	**200**	<0.2	<0.5	<1	<3	<0.05
BH110	0.09-0.4	Fill: silty clayey sand	Coarse	**8.1**	**23**	**5**	<4	**65**	**33**	**7**	**78**	**47**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH110	1.0-1.4	Fill: silty sandy clay	Coarse	NA	NA	NA	<4	**28**	**15**	**64**	**27**	**67**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH111	0.05-0.4	Fill: silty clayey gravel	Coarse	**8.8**	**16**	**6**	<4	**49**	**47**	**9**	**84**	**49**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH111	0.4-0.6	silty clayey sand	Coarse	NA	NA	NA	<4	**14**	**2**	**8**	**10**	**19**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH112	0.08-0.3	Fill: silty gravelly sand	Coarse	**8.5**	**12**	**7**	<4	**51**	**16**	**6**	**64**	**29**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH113	0.18-0.5	silty sandy clay	Coarse	NA	NA	NA	<4	**14**	**4**	**4**	**4**	**9**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH113	0.18-0.5	Lab duplicate	Coarse	NA	NA	NA	<4	**14**	**3**	**5**	**4**	**11**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH114	0.23-0.4	Fill: silty clayey sand	Coarse	NA	NA	NA	<4	**17**	<1	**3**	**2**	**3**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH114	0.4-0.7	silty clayey sand	Coarse	NA	NA	NA	**4**	**31**	**13**	**10**	**23**	**47**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH115	0.16-0.4	Fill: silty gravelly sand	Coarse	NA	NA	NA	**7**	**40**	**2**	**6**	**9**	**13**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH116	0.21-0.55	gravelly sandy clay	Coarse	NA	NA	NA	**5**	**50**	<1	**4**	**10**	**1**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH117	0.12-0.3	Fill: gravelly silty sand	Coarse	NA	NA	NA	**10**	**22**	**5**	**8**	**20**	**18**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH117	0.3-0.7	Fill: silty gravelly sand	Coarse	NA	NA	NA	**22**	**62**	<1	**7**	**6**	**3**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH118	0.1-0.3	Fill: silty sand	Coarse	NA	NA	NA	**4**	**9**	**4**	**6**	**6**	**30**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH118	0.3-0.7	Silty clayey sand	Coarse	NA	NA	NA	**7**	**25**	**1**	**3**	**4**	**5**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH119	0.1-0.4	Fill: silty sand	Coarse	NA	NA	NA	**13**	**21**	**1**	**9**	**3**	**11**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH119	0.1-0.4	Lab duplicate	Coarse	NA	NA	NA	**13**	**19**	**2**	**9**	**3**	**13**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH120	0-0.2	Fill: silty clayey sand	Coarse	NA	NA	NA	**5**	**26**	**26**	**19**	**24**	**61**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.5**
BH120	0.2-0.5	Fill: silty sand	Coarse	NA	NA	NA	**10**	**46**	**7**	**10**	**12**	**17**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.2**
BH120	0.5-0.6	silty clay	Fine	NA	NA	NA	<4	**33**	<1	**5**	**4**	**2**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH121	0-0.4	Fill: silty clayey sand	Coarse	NA	NA	NA	**9**	**25**	**11**	**9**	**11**	**24**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.1**
BH122	0-0.4	Fill: silty clayey sand	Coarse	NA	NA	NA	**7**	**25**	**16**	**15**	**14**	**46**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.1**
BH123	0-0.5	Fill: silty clayey sand	Coarse	NA	NA	NA	**5**	**28**	**36**	**10**	**27**	**35**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH124	0-0.3	Fill: silty clayey sand	Coarse	NA	NA	NA	<4	**12**	**46**	**29**	**14**	**35**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH124	0-0.3	Lab duplicate	Coarse	NA	NA	NA	<4	**8**	**28**	**9**	**16**	**25**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH125	0-0.4	Fill: silty sand	Coarse	NA	NA	NA	<4	**60**	**18**	**7**	**47**	**51**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
TP126	0-0.5	Fill: silty sand	Coarse	NA	NA	NA	<4	**22**	**17**	**11**	**27**	**40**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.68**
TP126	0.6-0.7	silty sand	Coarse	NA	NA	NA	**5**	**17**	<1	**3**	**2**	**2**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
TP127	0-0.1	Fill: silty sand	Coarse	NA	NA	NA	<4	**21**	**49**	**39**	**21**	**51**	<1	<0.1	<25	<50	**560**	**470**	<0.2	<0.5	<1	<3	**7.4**
TP127	0.1-0.3	Fill: silty clayey sand	Coarse	NA	NA	NA	**9**	**39**	**10**	**13**	**13**	**22**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.1**
TP127	0.3-0.6	Fill: silty sand	Coarse	NA	NA	NA	**13**	**51**	**34**	**21**	**23**	**38**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.1**
TP127	0.6-0.7	silty sand	Coarse	NA	NA	NA	**6**	**15**	<1	**3**	**3**	**3**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH128	0-0.3	Fill: silty sand	Coarse	NA	NA	NA	<4	**12**	**16**	**49**	**8**	**120**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.4**
BH128	0.3-0.45	silty clayey sand	Coarse	NA	NA	NA	<4	**7**	**1**	**7**	**3**	**6**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
TP129	0-0.2	Fill: silty sand	Coarse	NA	NA	NA	<4	**15**	**22**	**16**	**14**	**61**	<1	<0.1	<25	<50	**140**	**100**	<0.2	<0.5	<1	<3	**1.4**
TP129	0-0.2	Lab duplicate	Coarse	NA	NA	NA	<4	**21**	**41**	**18**	**21**	**72**	<1	<0.1	<25	<50	**190**	**140**	<0.2	<0.5	<1	<3	**1.8**
TP129	0.2-0.6	Fill: silty clayey sand	Coarse	NA	NA	NA	**6**	**34**	**5**	**8**	**8**	**29**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	**0.1**
BH130	0-0.3	Fill: silty clayey sand	Coarse	NA	NA	NA	**18**	**48**	<1	**8**	**2**	**6**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
BH130	0.3-0.5	silty sand	Coarse	NA	NA	NA	**8**	**46**	<1	**4**	**3**	<1	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
SDup101	-	Duplicate	Coarse	**8.6**	**13**	**8**	<4	**7**	**58**	**3**	**96**	**35**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
SDup102	-	Duplicate	Coarse	NA	NA	NA	<4	**23**	**2**	**5**	**6**	**6**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<0.05
SDup103	-	Duplicate	Coarse	NA	NA	NA	**5**	**26**	**18**	**15**	**35**	**45**	<1	<0.1	<25	<50	<50	<100	<0.2	<0.5	<1	<1	<0.05
SDup104	-	Duplicate	Coarse	NA	NA	NA	**7**	**28**	**16**	**13**	**16**	**39**	<1	<0.1	<25	<50	<50	<100	<0.2	<0.5	<1	<1	**0.09**
BH12	0-0.3	Triplicate	Coarse	NA	NA	NA	<4	**19**	**29**	**11**	**18**	**34**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP129	0-0.2	Triplicate	Coarse	NA	NA	NA	<4	**17**	**27**	**21**	**14**	**57**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples				8	8	8	69	69	69	69	69	69	67	41	67	67	67	67	67	67	67	67	67
Maximum Value				9.1	23	8	22	65	58	64	96	120	<PQL	<PQL	<PQL	<PQL	560	470	<PQL	<PQL	<PQL	<PQL	7.4

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
BH101	0.07-0.2	Fill: silty gravelly sand	Coarse	9.1	22	5	160	540	350	2000	600	1600	370	640	215	170	1700	3300	75	135	165	180	72
BH101	0.07-0.2	Lab duplicate	Coarse	9.1	22	5	160	540	350	2000	600	1600	370	640	215	170	1700	3300	75	135	165	180	72
BH101	0.5-0.95	Fill: sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH101	1.5-1.95	Fill: sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH101	2.5-2.8	Fill: sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH101	3.0-3.4	Fill: sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH102	0-0.2	Fill: gravelly silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH102	0.5-0.7	Gravelly sandy clay	Fine	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	2500	6600	95	135	185	95	72
BH103	0-0.1	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH104	0-0.2	Fill: gravelly silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH104	0.2-0.5	Silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH105	0-0.1	Fill: silty gravelly sand	Coarse	8.6	13	8	160	670	330	2000	460	1200	370	640	215	170	1700	3300	75	135	165	180	72
BH105	0-0.1	Lab duplicate	Coarse	8.6	13	8	160	670	330	2000	460	1200	370	640	215	170	1700	3300	75	135	165	180	72
BH105	0.1-0.5	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH106	0-0.1	Fill: silty gravelly sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH106	0.5-0.95	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH106	1.8-2.0	Gravelly silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH107	0.1-0.2	Fill: gravelly silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH107	0.7-1.0	Silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH108	0.1-0.2	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH108	0.4-0.5	Fill: silty sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH108	0.7-1.0	Silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH109	0.2-0.41	Fill: silty clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH109	0.2-0.41	Lab duplicate	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH110	0.09-0.4	Fill: silty clayey sand	Coarse	8.1	23	5	160	540	350	2000	600	1600	370	640	215	170	1700	3300	75	135	165	180	72
BH110	1.0-1.4	Fill: silty sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH111	0.05-0.4	Fill: silty clayey gravel	Coarse	8.8	16	6	160	670	330	2000	460	1200	370	640	215	170	1700	3300	75	135	165	180	72
BH111	0.4-0.6	silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH112	0.08-0.3	Fill: silty gravelly sand	Coarse	8.5	12	7	160	670	330	2000	460	1200	370	640	215	170	1700	3300	75	135	165	180	72
BH113	0.18-0.5	silty sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH113	0.18-0.5	Lab duplicate	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH114	0.23-0.4	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH114	0.4-0.7	silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH115	0.16-0.4	Fill: silty gravelly sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH116	0.21-0.55	gravelly sandy clay	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH117	0.12-0.3	Fill: gravelly silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH117	0.3-0.7	Fill: silty gravelly sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH118	0.1-0.3	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH118	0.3-0.7	Silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH119	0.1-0.4	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH119	0.1-0.4	Lab duplicate	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH120	0-0.2	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH120	0.2-0.5	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH120	0.5-0.6	silty clay	Fine	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	2500	6600	95	135	185	95	72
BH121	0-0.4	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH122	0-0.4	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH123	0-0.5	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH124	0-0.3	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH124	0-0.3	Lab duplicate	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH125	0-0.4	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
TP126	0-0.5	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
TP126	0.6-0.7	silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
TP127	0-0.1	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
TP127	0.1-0.3	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
TP127	0.3-0.6	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
TP127	0.6-0.7	silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
BH128	0-0.3	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
BH128	0.3-0.45	silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75	135	165	180	72
TP129	0-0.2	Fill: silty sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
TP129	0-0.2	Lab duplicate	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	640	215	170	1700	3300	75	135	165	180	72
TP129	0.2-0.6	Fill: silty clayey sand	Coarse	NA	NA	NA	160	320	110	2000	60	230	370	--	215	170	1700	3300	75

TABLE S7
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled	PCBs	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH101	0.07-0.2	Fill: silty gravelly sand	<4	<0.4	**19**	**56**	**5**	<0.1	**66**	**37**	**1.1**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**190**	**190**	<0.2	<0.5	<1	<3	Not Detected
BH101	0.07-0.2	Lab duplicate	<4	<0.4	**18**	**52**	**4**	<0.1	**62**	**37**	**0.3**	**0.08**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**210**	**210**	<0.2	<0.5	<1	<3	NA
BH101	0.5-0.95	Fill: sandy clay	<4	<0.4	**39**	**15**	**6**	<0.1	**47**	**31**	**36**	**2.3**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH101	1.5-1.95	Fill: sandy clay	<4	<0.4	**31**	**12**	**17**	<0.1	**24**	**33**	**2.3**	**0.1**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Detected
BH101	2.5-2.8	Fill: sandy clay	<4	<0.4	**26**	**11**	**12**	<0.1	**23**	**38**	**3.4**	**0.2**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH101	3.0-3.4	Fill: sandy clay	**7**	<0.4	**40**	**15**	**28**	**0.1**	**17**	**56**	**0.72**	**0.07**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH102	0-0.2	Fill: gravelly silty sand	<4	<0.4	**14**	**14**	**14**	<0.1	**9**	**69**	**31**	**3.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**140**	**250**	**390**	<0.2	<0.5	<1	<3	Not Detected
BH102	0.5-0.7	Gravelly sandy clay	**6**	<0.4	**30**	**9**	**8**	<0.1	**5**	**26**	**1.8**	**0.2**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH103	0-0.1	Fill: silty clayey sand	<4	<0.4	**21**	**7**	**6**	<0.1	**15**	**55**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH104	0-0.2	Fill: gravelly silty sand	<4	<0.4	**12**	**44**	**25**	<0.1	**20**	**77**	**61**	**5.6**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**140**	**190**	**330**	<0.2	<0.5	<1	<3	Detected
BH104	0.2-0.5	Silty clayey sand	<4	<0.4	**25**	<1	**3**	<0.1	<1	**1**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH105	0-0.1	Fill: silty gravelly sand	<4	<0.4	**6**	**43**	**3**	<0.1	**66**	**28**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH105	0-0.1	Lab duplicate	<4	<0.4	**6**	**45**	**3**	<0.1	**65**	**29**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH105	0.1-0.5	Fill: silty sand	<4	<0.4	**10**	**2**	**4**	<0.1	**5**	**7**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH106	0-0.1	Fill: silty gravelly sand	<4	<0.4	**11**	**24**	**18**	<0.1	**11**	**60**	**5.7**	**0.72**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Detected
BH106	0.5-0.95	Fill: silty sand	<4	<0.4	**3**	**1**	**10**	<0.1	<1	**6**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH106	1.8-2.0	Gravelly silty sand	**7**	<0.4	**42**	<1	**3**	<0.1	<1	<1	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH107	0.1-0.2	Fill: gravelly silty sand	<4	<0.4	**27**	<1	**6**	<0.1	**2**	**3**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH107	0.7-1.0	Silty sand	<4	<0.4	**39**	<1	**5**	<0.1	<1	<1	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH108	0.1-0.2	Fill: silty sand	<4	<0.4	**20**	**3**	**8**	<0.1	**8**	**81**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH108	0.4-0.5	Fill: silty sandy clay	**4**	<0.4	**22**	**3**	**15**	<0.1	**4**	**42**	**0.2**	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH108	0.7-1.0	Silty sand	<4	<0.4	**16**	<1	**4**	<0.1	**2**	**16**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH109	0.2-0.41	Fill: silty clay	<4	<0.4	**28**	**21**	**6**	<0.1	**43**	**25**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH109	0.2-0.41	Lab duplicate	<4	<0.4	**29**	**19**	**6**	<0.1	**52**	**29**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**120**	**120**	<0.2	<0.5	<1	<3	NA
BH110	0.09-0.4	Fill: silty clayey sand	<4	<0.4	**65**	**33**	**7**	<0.1	**78**	**47**	**0.1**	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH110	1.0-1.4	Fill: silty sandy clay	<4	<0.4	**28**	**15**	**64**	<0.1	**27**	**67**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Detected
BH111	0.05-0.4	Fill: silty clayey gravel	<4	<0.4	**49**	**47**	**9**	<0.1	**84**	**49**	**0.1**	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH111	0.4-0.6	silty clayey sand	<4	<0.4	**14**	**2**	**8**	<0.1	**10**	**19**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH112	0.08-0.3	Fill: silty gravelly sand	<4	<0.4	**51**	**16**	**6**	<0.1	**64**	**29**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH113	0.18-0.5	silty sandy clay	<4	<0.4	**14**	**4**	**4**	<0.1	**4**	**9**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH113	0.18-0.5	Lab duplicate	<4	<0.4	**14**	**3**	**5**	<0.1	**4**	**11**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH114	0.23-0.4	Fill: silty clayey sand	<4	<0.4	**17**	<1	**3**	<0.1	**2**	**3**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH114	0.4-0.7	silty clayey sand	**4**	<0.4	**31**	**13**	**10**	<0.1	**23**	**47**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH115	0.16-0.4	Fill: silty gravelly sand	**7**	<0.4	**40**	**2**	**6**	<0.1	**9**	**13**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH116	0.21-0.55	gravelly sandy clay	**5**	<0.4	**50**	<1	**4**	<0.1	**10**	**1**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH117	0.12-0.3	Fill: gravelly silty sand	**10**	<0.4	**22**	**5**	**8**	<0.1	**20**	**18**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH117	0.3-0.7	Fill: silty gravelly sand	**22**	<0.4	**62**	<1	**7**	<0.1	**6**	**3**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH118	0.1-0.3	Fill: silty sand	**4**	<0.4	**9**	**4**	**6**	<0.1	**6**	**30**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH118	0.3-0.7	Silty clayey sand	**7**	<0.4	**25**	**1**	**3**	<0.1	**4**	**5**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH119	0.1-0.4	Fill: silty sand	**13**	<0.4	**21**	**1**	**9**	<0.1	**3**	**11**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH119	0.1-0.4	Lab duplicate	**13**	<0.4	**19**	**2**	**9**	<0.1	**3**	**13**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH120	0-0.2	Fill: silty clayey sand	**5**	<0.4	**26**	**26**	**19**	<0.1	**24**	**61**	**3.1**	**0.5**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH120	0.2-0.5	Fill: silty sand	**10**	<0.4	**46**	**7**	**10**	<0.1	**12**	**17**	**1.1**	**0.2**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH120	0.5-0.6	silty clay	<4	<0.4	**33**	<1	**5**	<0.1	**4**	**2**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH121	0-0.4	Fill: silty clayey sand	**9**	<0.4	**25**	**11**	**9**	<0.1	**11**	**24**	**0.5**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH122	0-0.4	Fill: silty clayey sand	**7**	<0.4	**25**	**16**	**15**	<0.1	**14**	**46**	**0.89**	**0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH123	0-0.5	Fill: silty clayey sand	**5**	<0.4	**28**	**36**	**10**	<0.1	**27**	**35**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH124	0-0.3	Fill: silty clayey sand	<4	<0.4	**12**	**46**	**29**	<0.1	**14**	**35**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH124	0-0.3	Lab duplicate	<4	<0.4	**8**	**28**	**9**	<0.1	**16**	**25**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH125	0-0.4	Fill: silty sand	<4	<0.4	**60**	**18**	**7**	<0.1	**47**	**51**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
TP126	0-0.5	Fill: silty sand	<4	<0.4	**22**	**17**	**11**	<0.1	**27**	**40**	**5.4**	**0.68**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
TP126	0.6-0.7	silty sand	**5**	<0.4	**17**	<1	**3**	<0.1	**2**	**2**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
TP127	0-0.1	Fill: silty sand	<4	<0.4	**21**	**49**	**39**	<0.1	**21**	**51**	**72**	**7.4**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	**310**	**420**	**730**	<0.2	<0.5	<1	<3	Not Detected
TP127	0.1-0.3	Fill: silty clayey sand	**9**	<0.4	**39**	**10**	**13**	<0.1	**13**	**22**	**2**	**0.1**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
TP127	0.3-0.6	Fill: silty sand	**13**	<0.4	**51**	**34**	**21**	<0.1	**23**	**38**	**0.57**	**0.1**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Detected
TP127	0.6-0.7	silty sand	**6**	<0.4	**15**	<1	**3**	<0.1	**3**	**3**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
BH128	0-0.3	Fill: silty sand	<4	**1**	**12**	**16**	**49**	**0.2**	**8**	**120**	**4.6**	**0.4**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Detected
BH128	0.3-0.45	silty clayey sand	<4	<0.4	**7**	**1**	**7**	<0.1	**3**	**6**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
TP129	0-0.2	Fill: silty sand	<4	<0.4	**15**	**22**	**16**	<0.1	**14**	**61**	**13**	**1.4**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**110**	**110**	<0.2	<0.5	<1	<3	Not Detected
TP129	0-0.2	Lab duplicate	<4	<0.4	**21**	**41**	**18**	<0.1	**21**	**72**	**18**	**1.8**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	**150**	**150**	<0.2	<0.5	<1	<3	NA
TP129	0.2-0.6	Fill: silty clayey sand	**6**	<0.4	**34**	**5**	**8**	<0.1	**8**	**29**	**1.1**	**0.1**	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH130	0-0.3	Fill: silty clayey sand	**18**	<0.4	**48**	<1	**8**	<0.1	**2**	**6**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	Not Detected
BH130	0.3-0.5	silty sand	**8**	<0.4	**46**	<1	**4**	<0.1	**3**	<1	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
SDup101	-	Duplicate	<4	<0.4	**7**	**58**	**3**	<0.1	**96**	**35**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
SDup102	-	Duplicate	<4	<0.4	**23**	**2**	**5**	<0.1	**6**	**6**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<3	NA
SDup103	-	Duplicate	**5**	<0.4	**26**	**18**	**15**	<0.1	**35**	**45**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDup104	-	Duplicate	**7**	<0.4	**28**	**16**	**13**	<0.1	**16**	**39**	**0.4**	**0.09**	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH12	0-0.3	Triplicate	<4	<0.4	**19**	**29**	**11**	<0.1	**18**	**34**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP129	0-0.2	Triplicate	<4	<0.4	**17**	**27**	**21**	<0.1	**14**	**57**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples			69	69	69	69	69	69	69	69	67	67	41	41	41	41	41	67	67	67	67	67	67	67	67	67	44
Maximum Value			22	1	65	58	64	0.2	96	120	72	7.4	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	310	420	730	<PQL	<PQL	<PQL	<PQL	Detected

Concentration above the CT1 — **VALUE**
Concentration above SCC1 — **VALUE**
Concentration above the SCC2 — **VALUE**
Concentration above PQL — **Bold**

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TABLE S8
SOIL LABORATORY TCLP RESULTS
All data in mg/L unless stated otherwise

			Nickel	B(a)P
PQL - Envirolab Services			0.02	0.001
TCLP1 - General Solid Waste			2	0.04
TCLP2 - Restricted Solid Waste			8	0.16
TCLP3 - Hazardous Waste			>8	>0.16
Sample Reference	**Sample Depth**	**Sample Description**		
BH101	0.07-0.2	Fill: silty gravelly sand	**0.1**	NA
BH101	0.07-0.2	Lab duplicate	**0.1**	NA
BH101	0.5-0.95	Fill: sandy clay	**0.05**	<0.001
BH101	0.5-0.95	Lab duplicate	**0.04**	<0.001
BH102	0-0.2	Fill: gravelly silty sand	NA	<0.001
BH104	0-0.2	Fill: gravelly silty sand	NA	<0.001
BH105	0-0.1	Fill: silty gravelly sand	**0.07**	NA
BH109	0.2-0.41	Fill: silty clay	**0.2**	NA
BH110	0.09-0.4	Fill: silty clayey sand	**0.09**	NA
BH111	0.05-0.4	Fill: silty clayey gravel	**0.4**	NA
BH112	0.08-0.3	Fill: silty gravelly sand	**0.2**	NA
BH125	0-0.4	Fill: silty sand	<0.02	NA
TP127	0-0.1	Fill: silty sand	NA	<0.001
TP129	0-0.2	Fill: silty sand	NA	<0.001
Total Number of samples			10	6
Maximum Value			0.4	<PQL

General Solid Waste	**VALUE**
Restricted Solid Waste	**VALUE**
Hazardous Waste	**VALUE**
Concentration above PQL	**Bold**

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TABLE S9
SOIL QA/QC SUMMARY

| | | | TRH C6 - C10 | TRH >C10-C16 | TRH >C16-C34 | TRH >C34-C40 | Benzene | Toluene | Ethylbenzene | m+p-xylene | o-Xylene | Naphthalene | Acenaphthylene | Acenaph-thene | Fluorene | Phenanthrene | Anthracene | Fluoranthene | Pyrene | Benzo(a)anthracene | Chrysene | Benzo(b,j+k)fluoranthene | Benzo(a)pyrene | Indeno(1,2,3-c,d)pyrene | Dibenzo(a,h)anthra-cene | Benzo(g,h,i)perylene | HCB | alpha- BHC | gamma- BHC | beta- BHC | Heptachlor | delta- BHC | Aldrin | Heptachlor Epoxide | Gamma- Chlordane | alpha- chlordane | Endosulfan I | pp- DDE | Dieldrin | Endrin | pp- DDD | Endosulfan II | pp- DDT | Endrin Aldehyde | Endosulfan Sulphate | Methoxychlor | Azinphos-methyl (Guthion) | Bromophos-ethyl | Chlorpyriphos | Chlorpyriphos-methyl | Diazinon | Dichlorvos | Dimethoate | Ethion | Fenitrothion | Malathion | Parathion | Ronnel | Total PCBS | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc |
|---|---|---

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ADWG: AustralianDrinking Water Guidelines
ANZG Australian and New Zealand Guidelines
B(a)P: Benzo(a)pyrene
CRC: Cooperative Research Centre
ESLs: Ecological Screening Levels
GIL: Groundwater Investigation Levels
HILs: Health Investigation Levels
HSLs: Health Screening Levels
HSL-SSA: Health Screening Level-SiteSpecific Assessment
NA: Not Analysed
NC: Not Calculated
NEPM: National Environmental Protection Measure
NHMRC: National Health and Medical Research Council
NL: Not Limiting
NSL: No Set Limit
OCP: Organochlorine Pesticides
OPP: Organophosphorus Pesticides
PAHs: Polycyclic Aromatic Hydrocarbons
ppm: Parts per million
PCBs: Polychlorinated Biphenyls
PCE: Perchloroethylene (Tetrachloroethylene or Tetrachloroethene)
PQL: Practical Quantitation Limit
RS: Rinsate Sample
RSL: Regional Screening Levels
SAC: Site Assessment Criteria
SSA: Site Specific Assessment
SSHSLs Site Specific Health Screening Levels
TB: Trip Blank
TCA: 1,1,1 Trichloroethane (methyl chloroform)
TCE: Trichloroethylene (Trichloroethene)
TS: Trip Spike
TRH: Total Recoverable Hydrocarbons
UCL: Upper Level Confidence Limit on Mean Value
USEPA United States Environmental Protection Agency
VOCC: Volatile Organic Chlorinated Compounds
WHO: World Health Organisation

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TABLE G1
SUMMARY OF GROUNDWATER LABORATORY RESULTS COMPARED TO ECOLOGICAL GILs SAC
All results in µg/L unless stated otherwise.

	PQL Envirolab Services	ANZG 2018 Fresh Waters	SAMPLES							
			MW101A	MW101A	MW102	MW105	WDup1 (dup)	WDup1	WDUP2	WDUP2 (dup)
Inorganic Compounds and Parameters										
pH		6.5 - 8.5	5.8	NA	4.6	4.4	NA	NA	NA	NA
Electrical Conductivity (µS/cm)	1	NSL	**460**	NA	**300**	**520**	NA	NA	NA	NA
Turbidity (NTU)		NSL	NA	NA	NA	NA	NA	NA	NA	NA
Metals and Metalloids										
Arsenic (As III)	1	24	<1	<1	<1	<1	<1	[NT]	<1	<1
Cadmium	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	[NT]	<0.1	<0.1
Chromium (SAC for Cr III adopted)	1	3.3	<1	<1	<1	**1**	<1	[NT]	<1	<1
Copper	1	1.4	**4**	**4**	**1**	**2**	<1	[NT]	**2**	**2**
Lead	1	3.4	<1	<1	<1	<1	<1	[NT]	<1	<1
Total Mercury (inorganic)	0.05	0.06	<0.05	[NT]	<0.05	<0.05	<0.05	<0.05	<0.05	[NT]
Nickel	1	11	**5**	**5**	**1**	**3**	**5**	[NT]	**1**	**1**
Zinc	1	8	**41**	**41**	**6**	**12**	**27**	[NT]	**11**	**11**
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)										
Benzene	1	950	<1	<1	<1	<1	<1	NA	<1	NA
Toluene	1	180	<1	<1	<1	<1	<1	NA	<1	NA
Ethylbenzene	1	80	<1	<1	<1	<1	<1	NA	<1	NA
m+p-xylene	2	75	<2	<2	<2	<2	<2	NA	<2	NA
o-xylene	1	350	<1	<1	<1	<1	<1	NA	<1	NA
Total xylenes	2	NSL	<2	<2	<2	<2	<2	NA	<2	NA
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	0.2	16	<0.2	NA	<0.2	<0.2	<0.2	NA	<0.1	NA
Acenaphthylene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Acenaphthene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Fluorene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Phenanthrene	0.1	0.6	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Anthracene	0.1	0.01	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Fluoranthene	0.1	1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Pyrene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Benzo(a)anthracene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Chrysene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Benzo(b,j+k)fluoranthene	0.2	NSL	<0.2	NA	<0.2	<0.2	<0.2	NA	<0.2	NA
Benzo(a)pyrene	0.1	0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Indeno(1,2,3-c,d)pyrene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Dibenzo(a,h)anthracene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Benzo(g,h,i)perylene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA

Concentration above the SAC	**VALUE**
Concentration above the PQL	**Bold**
GIL >PQL	Red

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TABLE G2
SUMMARY OF GROUNDWATER LABORATORY RESULTS COMPARED TO HUMAN CONTACT GILs
All results in µg/L unless stated otherwise.

	PQL Envirolab Services	Recreational (10 x NHMRC ADWG)	SAMPLES							
			MW101A	MW101A	MW102	MW105	WDup1 (dup)	WDup1	WDUP2	WDUP2 (dup)
Inorganic Compounds and Parameters										
pH		NSL	5.8	NA	4.6	4.4	NA	NA	NA	NA
Electrical Conductivity (µS/cm)	1	NSL	**460**	NA	**300**	**520**	NA	NA	NA	NA
Turbidity (NTU)		NSL	NA	NA	NA	NA	NA	NA	NA	NA
Metals and Metalloids										
Arsenic (As III)	1	100	<1	<1	<1	<1	<1	[NT]	<1	<1
Cadmium	0.1	20	<0.1	<0.1	<0.1	<0.1	<0.1	[NT]	<0.1	<0.1
Chromium (total)	1	500	<1	<1	<1	**1**	<1	[NT]	<1	<1
Copper	1	20000	**4**	**4**	**1**	**2**	<1	[NT]	**2**	**2**
Lead	1	100	<1	<1	<1	<1	<1	[NT]	<1	<1
Total Mercury (inorganic)	0.05	10	<0.05	[NT]	<0.05	<0.05	<0.05	<0.05	<0.05	[NT]
Nickel	1	200	**5**	**5**	**1**	**3**	**5**	[NT]	**1**	**1**
Zinc	1	30000	**41**	**41**	**6**	**12**	**27**	[NT]	**11**	**11**
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)										
Benzene	1	10	<1	<1	<1	<1	<1	NA	<1	NA
Toluene	1	8000	<1	<1	<1	<1	<1	NA	<1	NA
Ethylbenzene	1	3000	<1	<1	<1	<1	<1	NA	<1	NA
m+p-xylene	2	NSL	<2	<2	<2	<2	<2	NA	<2	NA
o-xylene	1	NSL	<1	<1	<1	<1	<1	NA	<1	NA
Total xylenes	2	6000	<2	<2	<2	<2	<2	NA	<2	NA
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	0.2	NSL	<0.2	NA	<0.2	<0.2	<0.2	NA	<0.1	NA
Acenaphthylene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Acenaphthene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Fluorene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Phenanthrene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Anthracene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Fluoranthene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Pyrene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Benzo(a)anthracene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Chrysene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Benzo(b,j+k)fluoranthene	0.2	NSL	<0.2	NA	<0.2	<0.2	<0.2	NA	<0.2	NA
Benzo(a)pyrene	0.1	0.1	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Indeno(1,2,3-c,d)pyrene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Dibenzo(a,h)anthracene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA
Benzo(g,h,i)perylene	0.1	NSL	<0.1	NA	<0.1	<0.1	<0.1	NA	<0.1	NA

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**
GIL >PQL — Red

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TABLE G3

GROUNDWATER LABORATORY RESULTS COMPARED TO SITE SPECIFIC HSLs - RISK ASSESSMENT

All results in µg/L unless stated otherwise.

	PQL Envirolab Services	NHMRC ADWG 2011	WHO 2008	USEPA RSL Tapwater 2017	SAMPLES					
					MW101A	MW101A	MW102	MW105	WDup1	WDUP2
Total Recoverable Hydrocarbons (TRH)										
C_6-C_9 Aliphatics (assessed using F1)	10	-	100	-	<10	<10	<10	<10	<10	<10
>C_9-C_{14} Aliphatics (assessed using F2)	50	-	100	-	**85**	NA	<50	<50	**79**	<50
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)										
Benzene	1	1	-	-	<1	<1	<1	<1	<1	<1
Toluene	1	800	-	-	<1	<1	<1	<1	<1	<1
Ethylbenzene	1	300	-	-	<1	<1	<1	<1	<1	<1
Total xylenes	2	600	-	-	<2	<2	<2	<2	<2	<2
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	1	-	-	6.1	<1	<1	<1	<1	<1	<1

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**
GIL >PQL Red

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TABLE G4
GROUNDWATER QA/QC SUMMARY

		TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene	Naphthalene	Acenaphthylene	Acenaph-thene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j+k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthra-cene	Benzo(g,h,i)perylene	Arsenic	Cadmium	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD	*10*	*50*	*100*	*100*	*1*	*1*	*1*	*2*	*1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.1*	*1*	*0.1*	*1*	*1*	*1*	*0.05*	*1*	*1*
	PQL Envirolab VIC	*10*	*50*	*100*	*100*	*1.0*	*1.0*	*1.0*	*2.0*	*1.0*	*0.2*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.1*	*1*	*0.1*	*1*	*1*	*1*	*0.05*	*1*	*1*
Intra	MW101A	<10	85	<100	<100	<1	<1	<1	<2	<1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	4	<1	<0.05	5	41
laboratory	WDup1	<10	79	<100	<100	<1	<1	<1	<2	<1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<1	<1	<0.05	5	27
duplicate	MEAN	nc	82	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	2.25	nc	nc	5	34
	RPD %	nc	7%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	156%	nc	nc	0%	41%
Inter	MW102	<10	<50	<100	<100	<1	<1	<1	<2	<1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	1	<1	<0.05	1	6
laboratory	WDUP2	<10	<50	<100	<100	<1	<1	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	2	<1	<0.05	1	11
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	1.5	nc	nc	1	8.5
	RPD %	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	67%	nc	nc	0%	59%
Trip	TS-W	-	-	-	-	120%	110%	111%	110%	110%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Spike	8/12/2021																																
Field	TB-W	NA	NA	NA	NA	<1	<1	<1	<2	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Blank	8/12/2021																																

Result outside of QA/QC acceptance criteria Value

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ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

CS	Characteristic Situation
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
GSV	Gas Screening Value
H_2S	Hydrogen Sulfide
LEL	Lower Explosive Limit
O_2	Oxygen
>>>	Measured LEL greater than 100%

Flow rates

- If the flow rate measured in the field was zero this has been adjusted to 0.1 L/hr (the minimum measurable flow rate of the instrument). The adjustment is indicated by a green font.
- If the measured flow rate was a negative value this has been converted to a positive value to account for potential flow rates. The adjustment is indicated by a green font.

GSV and CS Values

GSV and CS value calculated using the Modified Wilson Card Classification detailed in the *Assessment and Management* of *Hazardous Ground Gases, NSW EPA 2019* . Table 7 of the guidelines suggests the following adjustments:

- If methane >1% and/or carbon dioxide > 5% for CS1 then CS increased to 2 (adjustment indicated by blue italic font);
- If borehole flow rate > 70L/hr for CS2 then CS increased to 3 (adjustment indicated by blue italic font).

Gas Protection Values

Gas Protection Values derived from Table 8 of the *Assessment and Management of Hazardous Ground Gases, NSW EPA 2019.*

- For large commercial developments if Gas protection value equals 1 and methane concentration >20% then increase to CS3 (adjustment indicated by blue italic font).

GSV, CS and Gas Protection values for the entire Site

These values are calculated using the maximum values ecountered at the site and are not borehole specific.

TABLE SG1
SUMMARY OF FIELD GAS MEASUREMENTS

Site Use: **Large Commercial (eg warehouses)**		Peak HGG (Hazardous Ground Gas) Measurements							Standing Water Level (SWL)	Atmospheric pressure	Calculated Methane Gas Screening Value (GSV)	Calculated Carbon Dioxide Gas Screening Value (GSV)	Methane Characteristic Gas Situtation (CS)	Carbon Dioxide Characteristic Gas Situtation (CS)	Maximum CS value	Gas Protection Guidance Value
		CH_4 (max)	CO_2 (max)	O_2 (min)	CH_4 LEL (max)	H_2S (max)	CO (max)	Flow (max)								
Well Reference	**Sampling Round & Date**	% v/v	% v/v	% v/v	%LEL	ppm	ppm	L/hr	m	mBar	-	-	-	-	-	-
MW101	8/12/2021	1.3	14.2	20.3	31.4	0	0	1.2	2.72	995	0.02	0.17	*2*	2	2	1
MW106	8/12/2021	0	6.8	17.9	0	0	0	1.2	1.7	993	0.00	0.08	1	2	2	1
Total Number of Measurements		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Minimum Value		0	6.8	17.9	0	0	0	1.2	1.7	993	0	0.0816	1	2	2	1
Maximum Value		1.3	14.2	20.3	31.4	0	0	1.2	2.72	995	0.0	0.2	2	2	2	1
						GSV, CS and Gas Protection values for the entire Site					0.02	0.17	1	2	2	1

Residential not recomended without high level intervention and management
Level 3 Risk Assessment
Consider evacuation and social risks

Level 3 RA

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Appendix D: Borehole / Test pit Logs

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Log No. **BH101** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0		-	ASPHALTIC CONCRETE: 700mm.t				
										FILL: Silty gravelly sand, fine to medium grained, grey, medium to coarse grained, sub angular igneous gravel, trace of root fibres.	D			SCREEN: 11.23kg 0.0-0.5m NO FCF 0.07-0.5m
						N = 8 4,4,4				FILL: Sandy clay, low to medium plasticity, dark grey and brown, fine to medium grained sand, trace of igneous gravel, glass, ash, brick, plastic ands metal fragments and root fibres.	w<PL			SCREEN: 9.05kg 0.5-2.0m NO FCF
						N = 4 3,2,2	1							
							2							
						N > 12 12/ 100mm REFUSAL	3			as above, but greater moisture.	w>PL			SCREEN: 7.25kg 2.0-3.5m NO FCF INSUFFICIENT RETURN FOR BULK SCREEN FROM 3.5m Hazardous Ground Gas well installed to
							4							
						N > 31 1,18,13 REFUSAL	5			Extremely Weathered siltstone: silty CLAY, low to medium plasticity, light grey and red brown, with ironstone banding.	XW			4.5m. Class 18 machine slotted 50mm dia. PVC standpipe 4.5m to 0.5m. Casing 0.5m to 0.1m. 2mm sand filter pack 0.3m to 4.5m. Bentonite seal 0.2m to 0.3m. Backfilled with sand
										SILTSTONE: grey.				
							6			END OF BOREHOLE AT 6.0m				(and/or cuttings) to the surface. Completed with a concreted gatic cover.
							7							

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Log No. **BH101A** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0		-	ASPHALTIC CONCRETE: 70mm.t FILL: Silty gravelly sand, fine to medium grained, grey, medium to coarse grained sub angular igneous gravel, trace of ash and asphaltic concrete.	D			
							1			FILL: Sandy clay, low to medium plasticity, dark grey and brown, fine to medium grained sand, trace of igneous gravel, glass, ash, brick, plastic sheeting, tile fragments and root fibres.	w<PL			
							2		CI-CH	Sandy CLAY: medium to high plasticity, grey, fine to medium grained sand, trace of ironstone gravel and root fibres.	w>PL			
							3							
							4							
							5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, light grey and red brown, with ironstone banding.	XW			Groundwater monitoring well installed to 6.0m. Class 18 machine slotted 50mm dia. PVC standpipe 6.0m to 3.0m. casing 3.0m to 0.0m. 2mm sand filter pack 6.0m to 2.8m. Bentonite seal 2.8m to 1.0m.
							6			END OF BOREHOLE AT 6.0m				Backfilled with sand (and/or cuttings) to the surface. Completed with a concreted gatic cover.
							7							

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Log No. **BH102** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			FILL: Gravelly silty sand, fine to medium grained, brown, igneous gravel, trace of concrete, brick and tile fragments.	M			SCREEN: 9.2kg 0-0.5m NO FCF
									CL-CI	Gravelly sandy CLAY, low to medium plasticity, grey and orange brown, fine to medium grained sand, trace of ironstone gravel and silt.				
						N = 8 4,4,4			SM		W			
							1			Silty SAND: medium to coarse grained, light grey, trace of ironstone gravel.				
						N > 10 7,8,2								
						REFUSAL	2							
										Silty SAND: medium to coarse grained, orange brown.				
							3							
									CI-CH	Silty CLAY: medium to high plasticity, orange brown.	w>PL			
							4							
										as above, but light brown.				Groundwater monitoring well installed to 6.0m.Class 18 machine slotted 50mm dia. PVC standpipe6m to 3m. Casing 0m to 3m. 2mm sand filter pack 2.8m to 6m. Bentonite seal 2m to 2.8m. Backfilled with sand (and/or cuttings) to the surface. Completed with a gatic cover.
							5							
							6			END OF BOREHOLE AT 6.0m				
							7							

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Log No. **BH103** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■			N = 5 6,3,2	0		SM	FILL: Silty clayey sand, fine to medium grained, brown, trace of igneous and ironstone gravel and ash.	M			INSUFFICIENT RETURN FOR BULK SCREEN
										Gravelly silty SAND: fine to medium grained, yellow brown and orange brown, trace of ironstone gravel.	M			
							1			END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH104** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■	N = 8 2,2,6	0		SC	FILL: Gravelly silty sand, fine to medium grained, brown, medium to coarse grained sub angular igneous, sandstone and ironstone gravel, trace of ash and asphaltic concrete fragments.	M			SCREEN: 4.76kg 0-0.2m NO FCF
											M			
							1			Silty clayey SAND: fine to medium grained, orange brown, trace of ironstone gravel.				
										END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. BH105 1/1

SDUP101 0-0.1m

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
							0			FILL: Silty gravelly sand, fine to medium grained, dark brown, medium to coarse grained,sub angular igneous gravel, trace of asphaltic concrete.	M			SCREEN: 9.65kg 0-0.1m NO FCF
						N = 9 4,3,6	0.5		-	FILL: Silty sand, fine to medium grained, dark brown and orange brown, trace of igneous gravel and asphaltic concrete.	XW			
							1			Extremely Weathered sandstone: silty CLAY, low to medium plasticity, yellow brown mottled red brown, ironstone banding.				
							2							
							2.5			SANDSTONE: fine to medium grained, orange brown.				
							3			as above, but with ironstone banding.				
▼							4							Groundwater monitoring well installed to 6.0m.Class 18 machine slotted 50mm dia. PVC standpipe 6m to 3m. Casing 0m to 3m. 2mm sand filter pack 2.6m to 6m. Bentonite seal 2m to 2.6m. Backfilled with sand (and/or cuttings) to the surface.
							5							
							6			END OF BOREHOLE AT 6.0m				Completed with a gatic cover.
							7							

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Log No. **BH106** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty gravelly sand, fine to medium grained, dark brown, medium to coarse grained, sub angular, igneous gravel, trace of ironstone gravel and asphaltic concrete.	M			SCREEN: 7.49kg 0-0.1m NO FCF
	■		■		■	N = 13 5,6,7	1			FILL: Silty sand, fine to medium grained, yellow brown, trace of sandstone and igneous gravel.				SCREEN: 13.81kg 0.1-1.5m NO FCF
	■		■		■	N = 11 8,8,3	2		SM	Gravelly silty SAND: fine to medium grained, yellow brown and orange brown, medium to coarse grained ironstone gravel, trace of quartz.	M			
										END OF BOREHOLE AT 2.0m				Hazardous Ground Gas well installed to 1.5m. Class 18 machine slotted 50mm dia. PVC standpipe 1.5m to 0.5m. Casing 0.5m to 0.0m. 2mm sand filter pack 1.5m to 0.5m. Bentonite seal 0.2m to 0.5m. Backfilled with sand (and/or cuttings) to the surface. Completed with a concreted gatic cover
							3							
							4							
							5							
							6							
							7							

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Log No. BH107 1/1

SDUP102 0.1-0.3m

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			ASPHALTIC CONCRETE: 100mm.t				
	■		■		■				-	FILL: Gravelly silty sand, fine to medium grained, dark brown and orange brown, fine to medium grained igneous gravel, trace of ironstone gravel and asphaltic concrete fragments.	D			SCREEN: 8.60kg 0.1-0.5m NO FCF
	■		■			N > 14 8,14/ 200mm REFUSAL			SM		M			
							1			Silty SAND: fine to medium grained, orange brown and red brown, trace of ironstone and sandstone gravel.				
										END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH108** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** SPIRAL AUGER **R.L. Surface:** N/A

Date: 30/11/2021 **Datum:** N/A

Plant Type: JK205 **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION							0			ASPHALTIC CONCRETE: 100mm.t.				
									-	FILL: Silty sand, fine to medium grained, yellow brown, trace of igneous and ironstone gravel, asphaltic concrete and slag.	D			SCREEN: 7.13kg 0.1-0.4m NO FCF
						N = 5 3,3,2			SM	FILL: Silty sandy clay, low to medium plasticity, yellow and dark brown, fine to medium grained sand, trace of igneous and ironstone gravel, asphaltic concrete and glass.	D			INSUFFICIENT RETURN FOR BULK SCREEN
							1			Silty SAND: fine to medium grained, yellow brown, trace of root fibres.				
										END OF BOREHOLE AT 1.0m				
							2							
							3							
							4							
							5							
							6							
							7							

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Environmental logs are not to be used for geotechnical purposes

Log No. **BH109** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION			■				0			CONCRETE: 200mm.t				
	■								-	FILL: Silty clay, low top medium plasticity, grey, trace of sand, igneous gravel and asphaltic concrete.	w<PL			INSUFFICIENT RETURN FOR BULK SCREEN
										END OF BOREHOLE AT 0.41m				HAND AUGER REFUSAL ON INFERRED SANDSTONE BEDROCK
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. BH110 1/1

SDUP103 0.09-0.4m

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
	■		■		■		0		-	CONCRETE: 90mm.t FILL: Silty clayey sand, fine to medium grained, grey and brown, trace of igneous and ironstone gravel, concrete and ash.	D			SCREEN: 3.52kg 0.09-0.8m NO FCF
▼	■		■				1			FILL: Silty sandy clay, low to medium plasticity, brown, trace of igneous gravel, ash, plastic and root fibres.	w<PL			INSUFFICIENT RETURN FOR BULK SCREEN
							2			END OF BOREHOLE AT 1.8m				REFUSAL ON INFERRD BEDROCK
							3							
							4							
							5							
							6							
							7							

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Log No. **BH111** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■				0		-	ASPHALTIC CONCRETE: 50mm.t				
	■		■						-	FILL: Silty clayey gravel, fine to coarse grained, grey, sub angular igneous gravel, trace of asphaltic concrete.	D			INSUFFICIENT RETURN FOR BULK SCREEN
									SC	Silty clayey SAND: fine to medium grained, yellow brown, trace of sandstone and ironstone gravel and root fibres.	D			
							1			END OF BOREHOLE AT 0.6m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH112** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0		-	ASPHALTIC CONCRETE: 80mm.t				
										FILL: Silty gravelly sand, fine to medium grained, brown and grey, fine to coarse grained, sub angular, igneous gravel, trace of asphaltic concrete.	D			SCREEN: 4.81kg 0.08-0.3m NO FCF
									SC		D			
							1			Silty clayey SAND: fine to medium grained,orange brown, trace of ironstone and sandstone gravel.				
										END OF BOREHOLE AT 0.6m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH113** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■				0		CI-CH	CONCRETE: 180mm.t Silty sandy CLAY: medium to high plasticity, orange brown, fine to medium grained sand.	w<PL			
										END OF BOREHOLE AT 0.5m				
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH114** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■				0			CONCRETE: 230mm.t				
	■								-	FILL: Silty clayey sand, fine to medium grained, brown, trace of	M			INSUFFICIENT RETURN FOR BULK SCREEN
									SC	igneous and ironstone gravel and ash.	M			
										Silty clayey sand: fine to medium grained, orange brown, trace of ironstone gravel.				
							1			END OF BOREHOLE AT 0.7m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH115** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION			■				0			CONCRETE: 160mm.t				
	■								-	FILL: Silty gravelly sand, fine to medium grained, brown, fine to coarse grained sub angular igneous gravel, trace of ironstone gravel, concrete and ash.	D			SCREEN: 2.68kg 0.16-0.14m NO FCF
										END OF BOREHOEL AT 0.4m				HAND AUGER REFUSAL ON INFERRED BEDROCK
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH116** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION			■				0			CONCRETE: 210mm.t				
	■								CL-CI	Gravelly sandy CLAY: low to medium plasticity, orange brown, fine to medium grained sand, fine to coarse grained ironstone gravel.	M			SCREEN: 3.56kg 0.21-0.55m NO FCF
										END OF BOREHOLE AT 0.55m				
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH117** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			CONCRETE: 120mm.t				
									-	FILL: Gravelly silty sand, fine to medium grained, brown, fine to coarse grained igneous gravel, trace of ironstone gravel and concrete.	D			SCREEN: 2.86kg 0.12-0.3m NO FCF
							1			FILL: Silty gravelly sand, fine to medium grained, yellow brown, fine to medium grained, sub angular ironstone gravel, trace of igneous gravel and ash.				INSUFFICIENT RETURN FOR BULK SCREEN
										END OF BOREHOLE AT 0.7m				HAND AUGER REFUSAL ON INFERRED BEDROCK
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH118** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0		-	CONCRETE: 100mm.t				
										FILL: Silty sand, fine to medium grained, brown, trace of igneous gravel and ash.	D			SCREEN: 2.15kg 0.1-0.3m NO FCF
									SC		D			
										Silty clayey SAND: fine to medium grained, yellow brown, trace of sandstone gravel.				
							1			END OF BOREHOLE AT 0.7m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH119** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 1/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0		-	CONCRETE: 100mm.t FILL: Silty sand, fine to medium grained, brown, trace of igneous and ironstone gravel and ash.	D			SCREEN: 2.48kg 0.1-0.4m NO FCF
									SC	Silty clayey SAND: fine to medium grained, orange brown, trace of ironstone gravel.	D			
							1			END OF BOREHOLE AT 0.8m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH120** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty clayey sand, fine to medium grained, brown, trace of ironstone and igneous gravel, tile, brick and concrete fragments and root fibres.	M D			SCREEN: 3.45kg 0.0-0.2m NO FCF
									CL-CI	FILL: Silty sand, fine to medium grained, brown, trace of ironstone and igneous gravel, and root fibres.	w>PL			SCREEN: 2.80kg 0.2-0.5m NO FCF
							1			Silty CLAY: low to medium plasticity, grey and orange brown mottled red, trace of ironstone gravel and root fibres.				
										END OF BOREHOLE AT 0.6m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH121** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clayey sand, fine to medium grained, brown, trace of igneous and ironstone gravel, tile, brick, concrete and plastic fragments and root fibres.	D			SCREEN: 4.15kg 0.0-0.6m NO FCF
										END OFBOREHOLE AT 0.6m				HAND AUGER REFUSAL
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. BH122 1/1

SDUP104 0.0-0.4m

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clayey sand, fine to medium grained, brown, trace of igneous and ironstone gravel, brick, tile fragments, ash and root fibres.	D			SCREEN: 4.22kg 0.0-0.5m NO FCF
										END OFBOREHOLE AT 0.5m				HAND AUGER REFUSAL
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **BH123** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clayey sand, fine to medium grained, brown, trace of ironstone and igneous gravel, brick and tile fragments, ash and root fibres	D			SCREEN: 3.98kg 0.0-0.5m NO FCF
										END OFBOREHOLE AT 0.5m				HAND AUGER REFUSAL
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. BH124 1/1

SDUP105 0.0-0.3m

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clayey sand, fine to medium grained, brown, trace of igneous and ironstone gravel, brick and tile fragments, ash and root fibres.	D			SCREEN: 5.32kg 0.0-0.3m NO FCF
										END OFBOREHOLE AT 0.3m				HAND AUGER REFUSAL ON INFERRED SANDSTONE BEDROCK
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. BH125 1/1

SDUP106 0.0-0.4m

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to medium grained, brown, trace of igneous and ironstone gravel, brick and tile fragments, slag, ash, and root fibres.	D			SCREEN: 2.65kg 0.0-0.4m NO FCF
										END OF BOREHOLE AT 0.4m				HAND AUGER REFUSAL ON BRICK FRAGMENTS
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **TP126** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND TOOLS **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to medium grained, brown, trace of igneous and ironstone gravel, brick, glass, concrete and asphaltic concrete fragments, ash and root fibres.	M			SCREEN: 11.24kg 0.0-0.5m NO FCF
									SM	Silty SAND: fine to medium grained, yellow brown, trace of ironstone and sandstone gravel.	M			
							1			END OF TEST PIT AT 0.7m				
							2							
							3							
							4							
							5							
							6							
							7							

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Log No. **TP127** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND TOOLS **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty sand, fine to medium grained, brown, trace of igneous and ironstone gravel, ash, brick and tile fragments and root fibres.	D			SCREEN: 10.85kg 0.0-0.1m NO FCF
	■		■		■				SM	FILL: Silty clayey sand, fine to medium grained, orange brown, trace of igneous and ironstone gravel, styrofoam and ash.	D			SCREEN: 11.62kg 0.1-0.3m NO FCF
	■		■		■		1			FILL: Silty sand, fine to medium grained, brown, trace of ironstone and igneous gravel, styrofoam and ash.				SCREEN: 8.30kg 0.3-0.6m NO FCF
										Silty SAND: fine to medium grained, grey, trace of ironstone gravel.				
							2			END OF TEST PIT AT 0.7m				
							3							
							4							
							5							
							6							
							7							

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Log No. **BH128** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■				0			FILL: Silty sand, fine to medium grained, brown, trace of ironstone and igneous gravel, ash and root fibres.	D			INSUFFICIENT RETURN FOR BULK SCREEN
									SC	Silty clayey SAND: fine to medium grained, orange brown, trace of ironstone gravel.	D			
										END OF BOREHOLE AT 0.45m				
							1							
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **TP129** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND TOOLS **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		■		0			FILL: Silty sand, fine to medium grained, brown, trace of igneous and ironstone gravel, brick, tile concrete, plastic and glass fragments, ash and root fibres.	M			SCREEN: 10.8kg 0.0-0.2m NO FCF
										FILL: Silty clayey sand, fine to medium grained, orange brown, trace of igneous and ironstone gravel, asphaltic concrete, ash and root fibres.				SCREEN: 9.65kg 0.2-0.6m NO FCF
							1			END OF TEST PIT AT 0.6m				HAND AUGER REFUSAL ON INFERRED BEDROCK
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH130** **1/1**

Client: SYESUN PTY LTD - FLOWER POWER TERRY HILLS

Project: PROPOSED REDEVELOPMENT OF GARDEN CENTRE

Location: 277 MONA VALE ROAD, TERRY HILLS, NSW

Job No.: E34278PH **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 2/12/2021 **Datum:** N/A

Plant Type: **Logged/Checked by:** M.M.E./T.H.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	SAMPLES DB	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLE-TION	■		■		■		0			FILL: Silty clayey sand, fine to medium grained sand, orange brown, trace of igneous and ironstone gravel, ash and asphaltic concrete.	M			SCREEN: 5.3kg 0.0-0.3m NO FCF
	■		■						SM		M			
										Silty SAND: fine to medium grained, yellow brown, trace of ironstone gravel.				
							1			END OF BOREHOLE AT .5m				
							2							
							3							
							4							
							5							
							6							
							7							

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ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 *'Geotechnical Site Investigations'*. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the

structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of limited reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock cuttings. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be assessed from the cuttings, together with some information from "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg. from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289.6.3.1–2004 (R2016) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)'*.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as

  N = 13
  4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

  N > 30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

A modification to the SPT is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as 'N_c' on the borehole logs, together with the number of blows per 150mm penetration.

LOGS

The borehole or test pit logs presented herein are an interpretation of the subsurface conditions, and their reliability will depend to some extent on the frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will enable the most reliable assessment, but is not always practicable or possible to justify on economic grounds. In any case, the boreholes or test pits represent only a very small sample of the total subsurface conditions.

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than 'straight line' variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

Where groundwater levels are measured in boreholes, there are several potential problems:

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it is left open.
- A localised perched water table may lead to an erroneous indication of the true water table.
- Water table levels will vary from time to time with seasons or recent weather changes and may not be the same at the time of construction.
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must be washed out of the hole or 'reverted' chemically if reliable water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after the groundwater level has stabilised at intervals ranging from several days to perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg. bricks, steel, etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably assess the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS

SOIL


FILL


TOPSOIL


CLAY (CL, CI, CH)


SILT (ML, MH)


SAND (SP, SW)


GRAVEL (GP, GW)


SANDY CLAY (CL, CI, CH)


SILTY CLAY (CL, CI, CH)


CLAYEY SAND (SC)


SILTY SAND (SM)


GRAVELLY CLAY (CL, CI, CH)


CLAYEY GRAVEL (GC)


SANDY SILT (ML, MH)


PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK


CONGLOMERATE


SANDSTONE


SHALE/MUDSTONE


SILTSTONE


CLAYSTONE


COAL


LAMINITE


LIMESTONE


PHYLLITE, SCHIST


TUFF


GRANITE, GABBRO


DOLERITE, DIORITE


BASALT, ANDESITE


QUARTZITE

OTHER MATERIALS


BRICKS OR PAVERS


CONCRETE


ASPHALTIC CONCRETE

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 65% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
ine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	–	–	–	–

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $Cu > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_U = \frac{D_{60}}{D_{10}} \qquad and \qquad C_C = \frac{(D_{30})^2}{D_{10}\, D_{60}}$$

Where D_{10}, D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

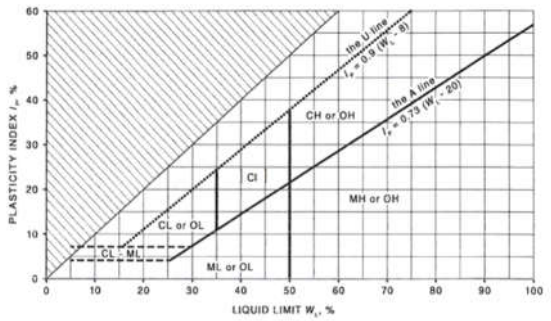
1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

2 Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.

3 Clay soils with liquid limits > 35% and ≤ 50% may be classified as being of medium plasticity.

4 The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour



LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record		Standing water level. Time delay following completion of drilling/excavation may be shown.
		Extent of borehole/test pit collapse shortly after drilling/excavation.
		Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
	PFAS	Soil sample taken over depth indicated, for analysis of Per- and Polyfluoroalkyl Substances.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25	Vane shear reading in kPa of undrained shear strength.
	PID = 100	Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	w > PL	Moisture content estimated to be greater than plastic limit.
	$w \approx$ PL	Moisture content estimated to be approximately equal to plastic limit.
	w < PL	Moisture content estimated to be less than plastic limit.
	$w \approx$ LL	Moisture content estimated to be near liquid limit.
	w > LL	Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D	DRY – runs freely through fingers.
	M	MOIST – does not run freely but no free water visible on soil surface.
	W	WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT – unconfined compressive strength ≤ 25kPa.
	S	SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa.
	F	FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa.
	St	STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa.
	VSt	VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa.
	Hd	HARD – unconfined compressive strength > 400kPa.
	Fr	FRIABLE – strength not attainable, soil crumbles.
	( )	Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)	VL	VERY LOOSE – Density Index (I_D) Range (%) ≤ 15 – SPT 'N' Value Range (Blows/300mm) 0 – 4
	L	LOOSE – > 15 and ≤ 35 – 4 – 10
	MD	MEDIUM DENSE – > 35 and ≤ 65 – 10 – 30
	D	DENSE – > 65 and ≤ 85 – 30 – 50
	VD	VERY DENSE – > 85 – > 50
	( )	Bracketed symbol indicates estimated density based on ease of drilling or other assessment.

Log Column	Symbol	Definition
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Twin pronged tungsten carbide bit.
	T_{60}	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.
	Soil Origin	The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
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 and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	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 recognisable. 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 recognisable, 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.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: *'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'*. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	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.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored 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.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Appendix E: Laboratory Report(s) & COC Documents

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CERTIFICATE OF ANALYSIS 284547

Client Details

Client	JK Environments
Attention	Todd Hore
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E34278PH, Terrey Hills**
Number of Samples	72 Soil, 2 Water
Date samples received	03/12/2021
Date completed instructions received	03/12/2021

Analysis Details

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

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

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

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

Report Details

Date results requested by	10/12/2021
Date of Issue	10/12/2021

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Authorised by Asbestos Approved Signatory: Lucy Zhu

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vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-1	284547-2	284547-3	284547-4	284547-5
Your Reference	UNITS	BH101	BH101	BH101	BH101	BH101
Depth		0.07-0.2	0.5-0.95	1.5-1.95	2.5-2.8	3.0-3.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	87	96	82	90	84

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-7	284547-8	284547-10	284547-12	284547-13
Your Reference	UNITS	BH102	BH102	BH103	BH104	BH104
Depth		0-0.2	0.5-0.7	0-0.1	0-0.2	0.2-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	92	90	91	81	94

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-15	284547-16	284547-18	284547-19	284547-20
Your Reference	UNITS	BH105	BH105	BH106	BH106	BH106
Depth		0-0.1	0.1-0.5	0-0.1	0.5-0.95	1.8-2.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	92	92	92	93	94

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-21	284547-22	284547-23	284547-24	284547-25
Your Reference	UNITS	BH107	BH107	BH108	BH108	BH108
Depth		0.1-0.2	0.7-1.0	0.1-0.2	0.4-0.5	0.7-1.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	94	94	75	96	98

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-26	284547-27	284547-28	284547-29	284547-30
Your Reference	UNITS	BH109	BH110	BH110	BH111	BH111
Depth		0.2-0.41	0.09-0.4	1.0-1.4	0.05-0.4	0.4-0.6
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	86	90	99	106	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-31	284547-33	284547-34	284547-35	284547-36
Your Reference	UNITS	BH112	BH113	BH114	BH114	BH115
Depth		0.08-0.3	0.18-0.5	0.23-0.4	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	80	95	106	99	101

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-37	284547-38	284547-39	284547-40	284547-41
Your Reference	UNITS	BH116	BH117	BH117	BH118	BH118
Depth		0.21-0.55	0.12-0.3	0.3-0.7	0.1-0.3	0.3-0.7
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	109	106	107	107	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-42	284547-44	284547-45	284547-46	284547-47
Your Reference	UNITS	BH119	BH120	BH120	BH120	BH121
Depth		0.1-0.4	0-0.2	0.2-0.5	0.5-0.6	0-0.4
Date Sampled		1/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	97	93	99	105	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-48	284547-49	284547-50	284547-51	284547-52
Your Reference	UNITS	BH122	BH123	BH124	BH125	TP126
Depth		0-0.4	0-0.5	0-0.3	0-0.4	0-0.5
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	98	96	94	107	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-53	284547-54	284547-55	284547-56	284547-57
Your Reference	UNITS	TP126	TP127	TP127	TP127	TP127
Depth		0.6-0.7	0-0.1	0.1-0.3	0.3-0.6	0.6-0.7
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	101	104	99	109	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-58	284547-59	284547-60	284547-61	284547-62
Your Reference	UNITS	BH128	BH128	TP129	TP129	BH130
Depth		0-0.3	0.3-0.45	0-0.2	0.2-0.6	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH 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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	106	94	108	110	97

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		284547-63	284547-64	284547-65	284547-70	284547-71
Your Reference	UNITS	BH130	SDup101	SDup102	TB-S1	TB-S2
Depth		0.3-0.5	-	-	-	-
Date Sampled		2/12/2021	30/11/2021	30/11/2021	30/11/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]	[NA]
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]	[NA]
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	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	106	109	107	109	108

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		284547-74
Your Reference	UNITS	TS
Depth		-
Date Sampled		30/11/2021
Type of sample		Soil
Date extracted	-	07/12/2021
Date analysed	-	08/12/2021
Benzene	mg/kg	97%
Toluene	mg/kg	96%
Ethylbenzene	mg/kg	95%
m+p-xylene	mg/kg	96%
o-Xylene	mg/kg	96%
Naphthalene	mg/kg	[NT]
Total +ve Xylenes	mg/kg	[NT]
Surrogate aaa-Trifluorotoluene	%	96

svTRH (C10-C40) in Soil						
Our Reference		284547-1	284547-2	284547-3	284547-4	284547-5
Your Reference	UNITS	BH101	BH101	BH101	BH101	BH101
Depth		0.07-0.2	0.5-0.95	1.5-1.95	2.5-2.8	3.0-3.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	7/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	190	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	190	<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	180	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	260	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	440	<50	<50	<50	<50
Surrogate o-Terphenyl	%	73	87	75	82	86

svTRH (C10-C40) in Soil						
Our Reference		284547-7	284547-8	284547-10	284547-12	284547-13
Your Reference	UNITS	BH102	BH102	BH103	BH104	BH104
Depth		0-0.2	0.5-0.7	0-0.1	0-0.2	0.2-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	7/12/2021	07/12/2021	07/12/2021	7/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	08/12/2021	07/12/2021	08/12/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	140	<100	<100	140	<100
TRH C_{29} - C_{36}	mg/kg	250	<100	<100	190	<100
Total +ve TRH (C10-C36)	mg/kg	400	<50	<50	330	<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	310	<100	<100	260	<100
TRH >C_{34} -C_{40}	mg/kg	310	<100	<100	220	<100
Total +ve TRH (>C10-C40)	mg/kg	620	<50	<50	480	<50
Surrogate o-Terphenyl	%	81	74	75	75	75

svTRH (C10-C40) in Soil						
Our Reference		284547-15	284547-16	284547-18	284547-19	284547-20
Your Reference	UNITS	BH105	BH105	BH106	BH106	BH106
Depth		0-0.1	0.1-0.5	0-0.1	0.5-0.95	1.8-2.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	7/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
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	110	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	110	<50	<50
Surrogate o-Terphenyl	%	73	73	74	72	74

svTRH (C10-C40) in Soil						
Our Reference		284547-21	284547-22	284547-23	284547-24	284547-25
Your Reference	UNITS	BH107	BH107	BH108	BH108	BH108
Depth		0.1-0.2	0.7-1.0	0.1-0.2	0.4-0.5	0.7-1.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
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	%	79	72	72	75	81

svTRH (C10-C40) in Soil						
Our Reference		284547-26	284547-27	284547-28	284547-29	284547-30
Your Reference	UNITS	BH109	BH110	BH110	BH111	BH111
Depth		0.2-0.41	0.09-0.4	1.0-1.4	0.05-0.4	0.4-0.6
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	7/12/2021	7/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
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	%	74	73	77	71	76

svTRH (C10-C40) in Soil						
Our Reference		284547-31	284547-33	284547-34	284547-35	284547-36
Your Reference	UNITS	BH112	BH113	BH114	BH114	BH115
Depth		0.08-0.3	0.18-0.5	0.23-0.4	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
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	%	74	74	81	73	81

svTRH (C10-C40) in Soil						
Our Reference		284547-37	284547-38	284547-39	284547-40	284547-41
Your Reference	UNITS	BH116	BH117	BH117	BH118	BH118
Depth		0.21-0.55	0.12-0.3	0.3-0.7	0.1-0.3	0.3-0.7
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
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	%	76	72	71	72	72

svTRH (C10-C40) in Soil						
Our Reference		284547-42	284547-44	284547-45	284547-46	284547-47
Your Reference	UNITS	BH119	BH120	BH120	BH120	BH121
Depth		0.1-0.4	0-0.2	0.2-0.5	0.5-0.6	0-0.4
Date Sampled		1/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	7/12/2021	7/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
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	%	71	71	69	72	73

svTRH (C10-C40) in Soil						
Our Reference		284547-48	284547-49	284547-50	284547-51	284547-52
Your Reference	UNITS	BH122	BH123	BH124	BH125	TP126
Depth		0-0.4	0-0.5	0-0.3	0-0.4	0-0.5
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	07/12/2021	07/12/2021	08/12/2021
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	%	71	71	76	77	74

svTRH (C10-C40) in Soil						
Our Reference		284547-53	284547-54	284547-55	284547-56	284547-57
Your Reference	UNITS	TP126	TP127	TP127	TP127	TP127
Depth		0.6-0.7	0-0.1	0.1-0.3	0.3-0.6	0.6-0.7
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	08/12/2021	07/12/2021	07/12/2021	07/12/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	310	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	420	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	730	<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	560	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	470	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	1,000	<50	<50	<50
Surrogate o-Terphenyl	%	77	98	74	80	73

svTRH (C10-C40) in Soil						
Our Reference		284547-58	284547-59	284547-60	284547-61	284547-62
Your Reference	UNITS	BH128	BH128	TP129	TP129	BH130
Depth		0-0.3	0.3-0.45	0-0.2	0.2-0.6	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	08/12/2021	07/12/2021	07/12/2021
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	110	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	110	<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	140	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	250	<50	<50
Surrogate o-Terphenyl	%	73	72	79	76	73

svTRH (C10-C40) in Soil				
Our Reference		284547-63	284547-64	284547-65
Your Reference	UNITS	BH130	SDup101	SDup102
Depth		0.3-0.5	-	-
Date Sampled		2/12/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021
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	%	72	73	73

PAHs in Soil						
Our Reference		284547-1	284547-2	284547-3	284547-4	284547-5
Your Reference	UNITS	BH101	BH101	BH101	BH101	BH101
Depth		0.07-0.2	0.5-0.95	1.5-1.95	2.5-2.8	3.0-3.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	0.5	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	5.5	0.4	0.4	0.2
Anthracene	mg/kg	<0.1	1.3	0.1	0.1	<0.1
Fluoranthene	mg/kg	0.3	7.3	0.6	0.8	0.2
Pyrene	mg/kg	0.3	6.1	0.4	0.6	0.2
Benzo(a)anthracene	mg/kg	0.1	2.6	0.2	0.2	<0.1
Chrysene	mg/kg	0.1	2.9	0.2	0.3	0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	3.7	0.2	0.4	<0.2
Benzo(a)pyrene	mg/kg	0.1	2.3	0.1	0.2	0.07
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	1.3	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	1.8	0.1	0.2	<0.1
Total +ve PAH's	mg/kg	1.1	36	2.3	3.4	0.72
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	3.4	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	3.4	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	3.4	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	112	113	112	117	115

PAHs in Soil						
Our Reference		284547-7	284547-8	284547-10	284547-12	284547-13
Your Reference	UNITS	BH102	BH102	BH103	BH104	BH104
Depth		0-0.2	0.5-0.7	0-0.1	0-0.2	0.2-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Naphthalene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	0.3	<0.1
Acenaphthene	mg/kg	0.5	<0.1	<0.1	0.1	<0.1
Fluorene	mg/kg	0.5	<0.1	<0.1	0.2	<0.1
Phenanthrene	mg/kg	3.8	0.2	<0.1	4.9	<0.1
Anthracene	mg/kg	1.4	<0.1	<0.1	1.4	<0.1
Fluoranthene	mg/kg	4.8	0.3	<0.1	12	<0.1
Pyrene	mg/kg	5.1	0.4	<0.1	11	<0.1
Benzo(a)anthracene	mg/kg	3.2	0.2	<0.1	4.9	<0.1
Chrysene	mg/kg	2.1	0.1	<0.1	4.0	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	3.0	0.3	<0.2	7.8	<0.2
Benzo(a)pyrene	mg/kg	3.1	0.2	<0.05	5.6	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	1.4	<0.1	<0.1	3.3	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.3	<0.1	<0.1	0.9	<0.1
Benzo(g,h,i)perylene	mg/kg	1.9	0.1	<0.1	4.5	<0.1
Total +ve PAH's	mg/kg	31	1.8	<0.05	61	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	4.2	<0.5	<0.5	8.2	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	4.2	<0.5	<0.5	8.2	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	4.2	<0.5	<0.5	8.2	<0.5
Surrogate p-Terphenyl-d14	%	102	111	103	109	116

PAHs in Soil						
Our Reference		284547-15	284547-16	284547-18	284547-19	284547-20
Your Reference	UNITS	BH105	BH105	BH106	BH106	BH106
Depth		0-0.1	0.1-0.5	0-0.1	0.5-0.95	1.8-2.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	0.3	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.7	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.7	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	1	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.72	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.4	<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	0.6	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	5.7	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.9	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.99	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	1.0	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	102	112	106	113	111

PAHs in Soil						
Our Reference		284547-21	284547-22	284547-23	284547-24	284547-25
Your Reference	UNITS	BH107	BH107	BH108	BH108	BH108
Depth		0.1-0.2	0.7-1.0	0.1-0.2	0.4-0.5	0.7-1.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	0.2	<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	%	120	111	111	111	110

PAHs in Soil						
Our Reference		284547-26	284547-27	284547-28	284547-29	284547-30
Your Reference	UNITS	BH109	BH110	BH110	BH111	BH111
Depth		0.2-0.41	0.09-0.4	1.0-1.4	0.05-0.4	0.4-0.6
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	0.1	<0.05	0.1	<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	%	101	101	110	100	109

PAHs in Soil						
Our Reference		284547-31	284547-33	284547-34	284547-35	284547-36
Your Reference	UNITS	BH112	BH113	BH114	BH114	BH115
Depth		0.08-0.3	0.18-0.5	0.23-0.4	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	%	92	106	96	101	92

PAHs in Soil						
Our Reference		284547-37	284547-38	284547-39	284547-40	284547-41
Your Reference	UNITS	BH116	BH117	BH117	BH118	BH118
Depth		0.21-0.55	0.12-0.3	0.3-0.7	0.1-0.3	0.3-0.7
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	%	106	95	113	102	105

PAHs in Soil						
Our Reference		284547-42	284547-44	284547-45	284547-46	284547-47
Your Reference	UNITS	BH119	BH120	BH120	BH120	BH121
Depth		0.1-0.4	0-0.2	0.2-0.5	0.5-0.6	0-0.4
Date Sampled		1/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	0.3	0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	0.4	0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	0.3	<0.1	<0.1	0.1
Chrysene	mg/kg	<0.1	0.2	0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.7	0.4	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.5	0.2	<0.05	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.3	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	0.4	0.2	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	3.1	1.1	<0.05	0.5
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.6	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.7	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.7	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	106	99	99	104

PAHs in Soil						
Our Reference		284547-48	284547-49	284547-50	284547-51	284547-52
Your Reference	UNITS	BH122	BH123	BH124	BH125	TP126
Depth		0-0.4	0-0.5	0-0.3	0-0.4	0-0.5
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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	0.2	<0.1	<0.1	<0.1	0.7
Pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	0.8
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	0.8
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	1
Benzo(a)pyrene	mg/kg	0.1	<0.05	<0.05	<0.05	0.68
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	0.4
Total +ve PAH's	mg/kg	0.89	<0.05	<0.05	<0.05	5.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.9
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.9
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	1
Surrogate p-Terphenyl-d14	%	97	99	105	92	98

PAHs in Soil						
Our Reference		284547-53	284547-54	284547-55	284547-56	284547-57
Your Reference	UNITS	TP126	TP127	TP127	TP127	TP127
Depth		0.6-0.7	0-0.1	0.1-0.3	0.3-0.6	0.6-0.7
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Naphthalene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	1.6	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	4.2	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	2.2	0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	12	0.3	0.1	<0.1
Pyrene	mg/kg	<0.1	13	0.3	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	7.0	0.2	0.2	<0.1
Chrysene	mg/kg	<0.1	5.5	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	9.3	0.4	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	7.4	0.1	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	3.3	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.9	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	4.7	0.2	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	72	2.0	0.57	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	10	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	10	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	10	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	107	97	100	96

PAHs in Soil						
Our Reference		284547-58	284547-59	284547-60	284547-61	284547-62
Your Reference	UNITS	BH128	BH128	TP129	TP129	BH130
Depth		0-0.3	0.3-0.45	0-0.2	0.2-0.6	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	08/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	08/12/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.3	<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	0.8	<0.1	0.9	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	0.4	<0.1	<0.1
Fluoranthene	mg/kg	0.8	<0.1	1.9	0.2	<0.1
Pyrene	mg/kg	0.8	<0.1	1.9	0.2	<0.1
Benzo(a)anthracene	mg/kg	0.5	<0.1	1.7	0.1	<0.1
Chrysene	mg/kg	0.3	<0.1	0.9	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.6	<0.2	2	0.3	<0.2
Benzo(a)pyrene	mg/kg	0.4	<0.05	1.4	0.1	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	0.6	<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	0.2	<0.1	0.8	0.1	<0.1
Total +ve PAH's	mg/kg	4.6	<0.05	13	1.1	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	2.0	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.5	<0.5	2.0	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.6	<0.5	2.0	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	96	103	95	117

PAHs in Soil				
Our Reference		284547-63	284547-64	284547-65
Your Reference	UNITS	BH130	SDup101	SDup102
Depth		0.3-0.5	-	-
Date Sampled		2/12/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	07/12/2021	08/12/2021	08/12/2021
Date analysed	-	07/12/2021	08/12/2021	08/12/2021
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	%	96	104	99

Organochlorine Pesticides in soil						
Our Reference		284547-1	284547-7	284547-10	284547-12	284547-15
Your Reference	UNITS	BH101	BH102	BH103	BH104	BH105
Depth		0.07-0.2	0-0.2	0-0.1	0-0.2	0-0.1
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	104	100	94	98	95

Organochlorine Pesticides in soil						
Our Reference		284547-18	284547-21	284547-23	284547-26	284547-27
Your Reference	UNITS	BH106	BH107	BH108	BH109	BH110
Depth		0-0.1	0.1-0.2	0.1-0.2	0.2-0.41	0.09-0.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	109	98	93	90

Organochlorine Pesticides in soil						
Our Reference		284547-29	284547-31	284547-33	284547-35	284547-36
Your Reference	UNITS	BH111	BH112	BH113	BH114	BH115
Depth		0.05-0.4	0.08-0.3	0.18-0.5	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	88	91	90	91

Organochlorine Pesticides in soil						
Our Reference		284547-37	284547-38	284547-40	284547-42	284547-44
Your Reference	UNITS	BH116	BH117	BH118	BH119	BH120
Depth		0.21-0.55	0.12-0.3	0.1-0.3	0.1-0.4	0-0.2
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	94	92	98	92

Organochlorine Pesticides in soil						
Our Reference		284547-47	284547-48	284547-49	284547-50	284547-51
Your Reference	UNITS	BH121	BH122	BH123	BH124	BH125
Depth		0-0.4	0-0.4	0-0.5	0-0.3	0-0.4
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	90	91	91	91

Organochlorine Pesticides in soil						
Our Reference		284547-52	284547-54	284547-58	284547-60	284547-62
Your Reference	UNITS	TP126	TP127	BH128	TP129	BH130
Depth		0-0.5	0-0.1	0-0.3	0-0.2	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	08/12/2021
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
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	91	98	96	100

Organochlorine Pesticides in soil			
Our Reference		284547-64	284547-65
Your Reference	UNITS	SDup101	SDup102
Depth		-	-
Date Sampled		30/11/2021	30/11/2021
Type of sample		Soil	Soil
Date extracted	-	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	87

Organophosphorus Pesticides in Soil						
Our Reference		284547-1	284547-7	284547-10	284547-12	284547-15
Your Reference	UNITS	BH101	BH102	BH103	BH104	BH105
Depth		0.07-0.2	0-0.2	0-0.1	0-0.2	0-0.1
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	104	100	94	98	95

Organophosphorus Pesticides in Soil						
Our Reference		284547-18	284547-21	284547-23	284547-26	284547-27
Your Reference	UNITS	BH106	BH107	BH108	BH109	BH110
Depth		0-0.1	0.1-0.2	0.1-0.2	0.2-0.41	0.09-0.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	93	109	98	93	90

Organophosphorus Pesticides in Soil						
Our Reference		284547-29	284547-31	284547-33	284547-35	284547-36
Your Reference	UNITS	BH111	BH112	BH113	BH114	BH115
Depth		0.05-0.4	0.08-0.3	0.18-0.5	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	88	91	90	91

Organophosphorus Pesticides in Soil						
Our Reference		284547-37	284547-38	284547-40	284547-42	284547-44
Your Reference	UNITS	BH116	BH117	BH118	BH119	BH120
Depth		0.21-0.55	0.12-0.3	0.1-0.3	0.1-0.4	0-0.2
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	94	92	98	92

Organophosphorus Pesticides in Soil						
Our Reference		284547-47	284547-48	284547-49	284547-50	284547-51
Your Reference	UNITS	BH121	BH122	BH123	BH124	BH125
Depth		0-0.4	0-0.4	0-0.5	0-0.3	0-0.4
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	92	90	91	91	91

Organophosphorus Pesticides in Soil						
Our Reference		284547-52	284547-54	284547-58	284547-60	284547-62
Your Reference	UNITS	TP126	TP127	BH128	TP129	BH130
Depth		0-0.5	0-0.1	0-0.3	0-0.2	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	08/12/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	88	91	98	96	100

Organophosphorus Pesticides in Soil			
Our Reference		284547-64	284547-65
Your Reference	UNITS	SDup101	SDup102
Depth		-	-
Date Sampled		30/11/2021	30/11/2021
Type of sample		Soil	Soil
Date extracted	-	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	87

PCBs in Soil						
Our Reference		284547-1	284547-7	284547-10	284547-12	284547-15
Your Reference	UNITS	BH101	BH102	BH103	BH104	BH105
Depth		0.07-0.2	0-0.2	0-0.1	0-0.2	0-0.1
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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 TCMX	%	104	100	94	98	95

PCBs in Soil						
Our Reference		284547-18	284547-21	284547-23	284547-26	284547-27
Your Reference	UNITS	BH106	BH107	BH108	BH109	BH110
Depth		0-0.1	0.1-0.2	0.1-0.2	0.2-0.41	0.09-0.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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 TCMX	%	93	109	98	93	90

PCBs in Soil						
Our Reference		284547-29	284547-31	284547-33	284547-35	284547-36
Your Reference	UNITS	BH111	BH112	BH113	BH114	BH115
Depth		0.05-0.4	0.08-0.3	0.18-0.5	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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 TCMX	%	92	88	91	90	91

PCBs in Soil						
Our Reference		284547-37	284547-38	284547-40	284547-42	284547-44
Your Reference	UNITS	BH116	BH117	BH118	BH119	BH120
Depth		0.21-0.55	0.12-0.3	0.1-0.3	0.1-0.4	0-0.2
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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 TCMX	%	91	94	92	98	92

PCBs in Soil						
Our Reference		284547-47	284547-48	284547-49	284547-50	284547-51
Your Reference	UNITS	BH121	BH122	BH123	BH124	BH125
Depth		0-0.4	0-0.4	0-0.5	0-0.3	0-0.4
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
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 TCMX	%	92	90	91	91	91

PCBs in Soil						
Our Reference		284547-52	284547-54	284547-58	284547-60	284547-62
Your Reference	UNITS	TP126	TP127	BH128	TP129	BH130
Depth		0-0.5	0-0.1	0-0.3	0-0.2	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	08/12/2021
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 TCMX	%	88	91	98	96	100

PCBs in Soil			
Our Reference		284547-64	284547-65
Your Reference	UNITS	SDup101	SDup102
Depth		-	-
Date Sampled		30/11/2021	30/11/2021
Type of sample		Soil	Soil
Date extracted	-	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	94	87

Phenoxy Acid Herbicides in Soil				
Our Reference		284547-33	284547-38	284547-52
Your Reference	UNITS	BH113	BH117	TP126
Depth		0.18-0.5	0.12-0.3	0-0.5
Date Sampled		1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	09/12/2021	09/12/2021	09/12/2021
Date analysed	-	10/12/2021	10/12/2021	10/12/2021
Clopyralid	mg/kg	<0.5	<0.5	<0.5
3,5-Dichlorobenzoic acid	mg/kg	<0.5	<0.5	<0.5
o-chlorophenoxy acetic acid	mg/kg	<0.5	<0.5	<0.5
4-CPA	mg/kg	<0.5	<0.5	<0.5
Dicamba	mg/kg	<0.5	<0.5	<0.5
MCPP	mg/kg	<0.5	<0.5	<0.5
MCPA	mg/kg	<0.5	<0.5	<0.5
Dichlorprop	mg/kg	<0.5	<0.5	<0.5
2,4-D	mg/kg	<0.5	<0.5	<0.5
Bromoxynil	mg/kg	<0.5	<0.5	<0.5
Triclopyr	mg/kg	<0.5	<0.5	<0.5
2,4,5-TP	mg/kg	<0.5	<0.5	<0.5
2,4,5-T	mg/kg	<0.5	<0.5	<0.5
MCPB	mg/kg	<0.5	<0.5	<0.5
Dinoseb	mg/kg	<1	<1	<1
2,4-DB	mg/kg	<0.5	<0.5	<0.5
Ioxynil	mg/kg	<1	<1	<1
Picloram	mg/kg	<0.5	<0.5	<0.5
DCPA (Chlorthal) Diacid	mg/kg	<0.5	<0.5	<0.5
Acifluorfen	mg/kg	<2	<2	<2
2,4,6-T	mg/kg	<0.5	<0.5	<0.5
2,6-D	mg/kg	<0.5	<0.5	<0.5
Surrogate 2.4- DCPA	%	120	120	120

Carbamates in Soil				
Our Reference		284547-33	284547-38	284547-52
Your Reference	UNITS	BH113	BH117	TP126
Depth		0.18-0.5	0.12-0.3	0-0.5
Date Sampled		1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021
Carbaryl	mg/kg	<0.5	<0.5	<0.5
Carbofuran	mg/kg	<0.5	<0.5	<0.5
Molinate	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	88	77	92

Synthetic Pyrethroids in Soil				
Our Reference		284547-33	284547-38	284547-52
Your Reference	UNITS	BH113	BH117	TP126
Depth		0.18-0.5	0.12-0.3	0-0.5
Date Sampled		1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021
Bifenthrin	mg/kg	<0.5	<0.5	<0.5
Cyfluthrin	mg/kg	<2	<2	<2
Cypermethrin	mg/kg	<2	<2	<2
Deltamethrin	mg/kg	<0.5	<0.5	<0.5
Esfenvalerate	mg/kg	<0.5	<0.5	<0.5
Lamda Cyhalothrin	mg/kg	<0.5	<0.5	<0.5
Cis Permethrin	mg/kg	<0.5	<0.5	<0.5
Trans Permethrin	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	88	77	92

Acid Extractable metals in soil						
Our Reference		284547-1	284547-2	284547-3	284547-4	284547-5
Your Reference	UNITS	BH101	BH101	BH101	BH101	BH101
Depth		0.07-0.2	0.5-0.95	1.5-1.95	2.5-2.8	3.0-3.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	<4	<4	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	19	39	31	26	40
Copper	mg/kg	56	15	12	11	15
Lead	mg/kg	5	6	17	12	28
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	66	47	24	23	17
Zinc	mg/kg	37	31	33	38	56

Acid Extractable metals in soil						
Our Reference		284547-7	284547-8	284547-10	284547-12	284547-13
Your Reference	UNITS	BH102	BH102	BH103	BH104	BH104
Depth		0-0.2	0.5-0.7	0-0.1	0-0.2	0.2-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	6	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	30	21	12	25
Copper	mg/kg	14	9	7	44	<1
Lead	mg/kg	14	8	6	25	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	5	15	20	<1
Zinc	mg/kg	69	26	55	77	1

Acid Extractable metals in soil						
Our Reference		284547-15	284547-16	284547-18	284547-19	284547-20
Your Reference	UNITS	BH105	BH105	BH106	BH106	BH106
Depth		0-0.1	0.1-0.5	0-0.1	0.5-0.95	1.8-2.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	<4	<4	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	10	11	3	42
Copper	mg/kg	43	2	24	1	<1
Lead	mg/kg	3	4	18	10	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	66	5	11	<1	<1
Zinc	mg/kg	28	7	60	6	<1

Acid Extractable metals in soil						
Our Reference		284547-21	284547-22	284547-23	284547-24	284547-25
Your Reference	UNITS	BH107	BH107	BH108	BH108	BH108
Depth		0.1-0.2	0.7-1.0	0.1-0.2	0.4-0.5	0.7-1.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	<4	<4	4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	27	39	20	22	16
Copper	mg/kg	<1	<1	3	3	<1
Lead	mg/kg	6	5	8	15	4
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	<1	8	4	2
Zinc	mg/kg	3	<1	81	42	16

Acid Extractable metals in soil						
Our Reference		284547-26	284547-27	284547-28	284547-29	284547-30
Your Reference	UNITS	BH109	BH110	BH110	BH111	BH111
Depth		0.2-0.41	0.09-0.4	1.0-1.4	0.05-0.4	0.4-0.6
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	28	65	28	49	14
Copper	mg/kg	21	33	15	47	2
Lead	mg/kg	6	7	64	9	8
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	43	78	27	84	10
Zinc	mg/kg	25	47	67	49	19

Acid Extractable metals in soil						
Our Reference		284547-31	284547-33	284547-34	284547-35	284547-36
Your Reference	UNITS	BH112	BH113	BH114	BH114	BH115
Depth		0.08-0.3	0.18-0.5	0.23-0.4	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	<4	<4	4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	51	14	17	31	40
Copper	mg/kg	16	4	<1	13	2
Lead	mg/kg	6	4	3	10	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	64	4	2	23	9
Zinc	mg/kg	29	9	3	47	13

Acid Extractable metals in soil						
Our Reference		284547-37	284547-38	284547-39	284547-40	284547-41
Your Reference	UNITS	BH116	BH117	BH117	BH118	BH118
Depth		0.21-0.55	0.12-0.3	0.3-0.7	0.1-0.3	0.3-0.7
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	5	10	22	4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	50	22	62	9	25
Copper	mg/kg	<1	5	<1	4	1
Lead	mg/kg	4	8	7	6	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	10	20	6	6	4
Zinc	mg/kg	1	18	3	30	5

Acid Extractable metals in soil						
Our Reference		284547-42	284547-44	284547-45	284547-46	284547-47
Your Reference	UNITS	BH119	BH120	BH120	BH120	BH121
Depth		0.1-0.4	0-0.2	0.2-0.5	0.5-0.6	0-0.4
Date Sampled		1/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	13	5	10	<4	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	21	26	46	33	25
Copper	mg/kg	1	26	7	<1	11
Lead	mg/kg	9	19	10	5	9
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	24	12	4	11
Zinc	mg/kg	11	61	17	2	24

Acid Extractable metals in soil						
Our Reference		284547-48	284547-49	284547-50	284547-51	284547-52
Your Reference	UNITS	BH122	BH123	BH124	BH125	TP126
Depth		0-0.4	0-0.5	0-0.3	0-0.4	0-0.5
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	7	5	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	25	28	12	60	22
Copper	mg/kg	16	36	46	18	17
Lead	mg/kg	15	10	29	7	11
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	27	14	47	27
Zinc	mg/kg	46	35	35	51	40

Acid Extractable metals in soil						
Our Reference		284547-53	284547-54	284547-55	284547-56	284547-57
Your Reference	UNITS	TP126	TP127	TP127	TP127	TP127
Depth		0.6-0.7	0-0.1	0.1-0.3	0.3-0.6	0.6-0.7
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	5	<4	9	13	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	21	39	51	15
Copper	mg/kg	<1	49	10	34	<1
Lead	mg/kg	3	39	13	21	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	21	13	23	3
Zinc	mg/kg	2	51	22	38	3

Acid Extractable metals in soil						
Our Reference		284547-58	284547-59	284547-60	284547-61	284547-62
Your Reference	UNITS	BH128	BH128	TP129	TP129	BH130
Depth		0-0.3	0.3-0.45	0-0.2	0.2-0.6	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	<4	<4	<4	6	18
Cadmium	mg/kg	1	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	7	15	34	48
Copper	mg/kg	16	1	22	5	<1
Lead	mg/kg	49	7	16	8	8
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	8	3	14	8	2
Zinc	mg/kg	120	6	61	29	6

Acid Extractable metals in soil						
Our Reference		284547-63	284547-64	284547-65	284547-75	284547-76
Your Reference	UNITS	BH130	SDup101	SDup102	BH124 - [TRIPLICATE]	TP129 - [TRIPLICATE]
Depth		0.3-0.5	-	-	0-0.3	0-0.2
Date Sampled		2/12/2021	30/11/2021	30/11/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Arsenic	mg/kg	8	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	46	7	23	19	17
Copper	mg/kg	<1	58	2	29	27
Lead	mg/kg	4	3	5	11	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	96	6	18	14
Zinc	mg/kg	<1	35	6	34	57

Moisture						
Our Reference		284547-1	284547-2	284547-3	284547-4	284547-5
Your Reference	UNITS	BH101	BH101	BH101	BH101	BH101
Depth		0.07-0.2	0.5-0.95	1.5-1.95	2.5-2.8	3.0-3.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	7.3	9.3	13	20	23

Moisture						
Our Reference		284547-7	284547-8	284547-10	284547-12	284547-13
Your Reference	UNITS	BH102	BH102	BH103	BH104	BH104
Depth		0-0.2	0.5-0.7	0-0.1	0-0.2	0.2-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	11	13	11	4.8	15

Moisture						
Our Reference		284547-15	284547-16	284547-18	284547-19	284547-20
Your Reference	UNITS	BH105	BH105	BH106	BH106	BH106
Depth		0-0.1	0.1-0.5	0-0.1	0.5-0.95	1.8-2.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	11	9.2	7.4	7.1	8.2

Moisture						
Our Reference		284547-21	284547-22	284547-23	284547-24	284547-25
Your Reference	UNITS	BH107	BH107	BH108	BH108	BH108
Depth		0.1-0.2	0.7-1.0	0.1-0.2	0.4-0.5	0.7-1.0
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	8.9	9.5	5.1	12	10

Moisture						
Our Reference		284547-26	284547-27	284547-28	284547-29	284547-30
Your Reference	UNITS	BH109	BH110	BH110	BH111	BH111
Depth		0.2-0.41	0.09-0.4	1.0-1.4	0.05-0.4	0.4-0.6
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	15	10	16	9.1	15

Moisture						
Our Reference		284547-31	284547-33	284547-34	284547-35	284547-36
Your Reference	UNITS	BH112	BH113	BH114	BH114	BH115
Depth		0.08-0.3	0.18-0.5	0.23-0.4	0.4-0.7	0.16-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	11	13	11	11	13

Moisture						
Our Reference		284547-37	284547-38	284547-39	284547-40	284547-41
Your Reference	UNITS	BH116	BH117	BH117	BH118	BH118
Depth		0.21-0.55	0.12-0.3	0.3-0.7	0.1-0.3	0.3-0.7
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	12	14	7.4	12	13

Moisture						
Our Reference		284547-42	284547-44	284547-45	284547-46	284547-47
Your Reference	UNITS	BH119	BH120	BH120	BH120	BH121
Depth		0.1-0.4	0-0.2	0.2-0.5	0.5-0.6	0-0.4
Date Sampled		1/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	11	13	8.7	10	11

Moisture						
Our Reference		284547-48	284547-49	284547-50	284547-51	284547-52
Your Reference	UNITS	BH122	BH123	BH124	BH125	TP126
Depth		0-0.4	0-0.5	0-0.3	0-0.4	0-0.5
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	11	11	8.3	10	11

Moisture						
Our Reference		284547-53	284547-54	284547-55	284547-56	284547-57
Your Reference	UNITS	TP126	TP127	TP127	TP127	TP127
Depth		0.6-0.7	0-0.1	0.1-0.3	0.3-0.6	0.6-0.7
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	12	6.6	9.0	10	11

Moisture						
Our Reference		284547-58	284547-59	284547-60	284547-61	284547-62
Your Reference	UNITS	BH128	BH128	TP129	TP129	BH130
Depth		0-0.3	0.3-0.45	0-0.2	0.2-0.6	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021	07/12/2021	07/12/2021
Moisture	%	11	8.1	7.5	7.9	9.3

Moisture				
Our Reference		284547-63	284547-64	284547-65
Your Reference	UNITS	BH130	SDup101	SDup102
Depth		0.3-0.5	-	-
Date Sampled		2/12/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	07/12/2021	07/12/2021	07/12/2021
Date analysed	-	07/12/2021	07/12/2021	07/12/2021
Moisture	%	6.7	5.1	8.8

Asbestos ID - soils NEPM - ASB-001						
Our Reference		284547-1	284547-2	284547-3	284547-4	284547-7
Your Reference	UNITS	BH101	BH101	BH101	BH101	BH102
Depth		0.07-0.2	0.5-0.95	1.5-1.95	2.5-2.8	0-0.2
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	1,178.41	973.52	703.05	781.59	801.51
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-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	Chrysotile asbestos detected Amosite 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
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	1.4104	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	See Above	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	0.9593	–	–
FA and AF Estimation*	g	–	–	0.0323	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	0.1364	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	0.0046	<0.001	<0.001

Asbestos ID - soils NEPM - ASB-001						
Our Reference		284547-8	284547-10	284547-12	284547-15	284547-16
Your Reference	UNITS	BH102	BH103	BH104	BH105	BH105
Depth		0.5-0.7	0-0.1	0-0.2	0-0.1	0.1-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	1,079.08	790.2	976	1,073.75	830.99
Sample Description	-	Beige coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Grey coarse-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	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	Chrysotile	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	0.0026	–	–
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 ID - soils NEPM - ASB-001						
Our Reference		284547-18	284547-19	284547-21	284547-23	284547-24
Your Reference	UNITS	BH106	BH106	BH107	BH108	BH108
Depth		0-0.1	0.5-0.95	0.1-0.2	0.1-0.2	0.4-0.5
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	878.71	831.15	795.23	921.94	799.68
Sample Description	-	Brown fine-grained soil & rocks	Beige fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-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	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	0.0014	–	–	–	–
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 ID - soils NEPM - ASB-001						
Our Reference		284547-26	284547-27	284547-28	284547-29	284547-31
Your Reference	UNITS	BH109	BH110	BH110	BH111	BH112
Depth		0.2-0.41	0.09-0.4	1.0-1.4	0.05-0.4	0.08-0.3
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	762.2	829.27	907.06	1,033.48	843.76
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey 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	Chrysotile	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	0.0083	–	–
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 ID - soils NEPM - ASB-001						
Our Reference		284547-33	284547-34	284547-35	284547-36	284547-37
Your Reference	UNITS	BH113	BH114	BH114	BH115	BH116
Depth		0.18-0.5	0.23-0.4	0.4-0.7	0.16-0.4	0.21-0.55
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	906.69	486.65	855.8	938.9	1,062.43
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Beige fine-grained soil & rocks	Brown 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	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 ID - soils NEPM - ASB-001						
Our Reference		284547-38	284547-39	284547-40	284547-42	284547-44
Your Reference	UNITS	BH117	BH117	BH118	BH119	BH120
Depth		0.12-0.3	0.3-0.7	0.1-0.3	0.1-0.4	0-0.2
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	938.18	1,130.04	734.28	828.1	922.4
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown 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	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 ID - soils NEPM - ASB-001						
Our Reference		284547-45	284547-47	284547-48	284547-49	284547-50
Your Reference	UNITS	BH120	BH121	BH122	BH123	BH124
Depth		0.2-0.5	0-0.4	0-0.4	0-0.5	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	472.61	1,116.96	893.66	947.54	870.68
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-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	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 ID - soils NEPM - ASB-001						
Our Reference		284547-51	284547-52	284547-54	284547-55	284547-56
Your Reference	UNITS	BH125	TP126	TP127	TP127	TP127
Depth		0-0.4	0-0.5	0-0.1	0.1-0.3	0.3-0.6
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	767.28	741.56	953.51	996.51	907.15
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown 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	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	Chrysotile Amosite Crocidolite
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	0.0056
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 ID - soils NEPM - ASB-001					
Our Reference		284547-58	284547-60	284547-61	284547-62
Your Reference	UNITS	BH128	TP129	TP129	BH130
Depth		0-0.3	0-0.2	0.2-0.6	0-0.3
Date Sampled		2/12/2021	2/12/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	10/12/2021	10/12/2021	10/12/2021	10/12/2021
Sample mass tested	g	744.82	970.94	920.66	890.45
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	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
Total Asbestos#1	g/kg	0.1023	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	See Above	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–
FA and AF Estimation*	g	0.0762	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	0.0102	<0.001	<0.001	<0.001

vTRH(C6-C10)/BTEXN in Water			
Our Reference		284547-72	284547-73
Your Reference	UNITS	FR-HA1	FR-HA2
Depth		-	-
Date Sampled		1/12/2021	2/12/2021
Type of sample		Water	Water
Date extracted	-	06/12/2021	06/12/2021
Date analysed	-	07/12/2021	07/12/2021
TRH C_6 - C_9	µg/L	280	280
TRH C_6 - C_{10}	µg/L	280	280
TRH C_6 - C_{10} less BTEX (F1)	µg/L	280	280
Benzene	µg/L	<1	<1
Toluene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
o-xylene	µg/L	<1	<1
Naphthalene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	100	101
Surrogate toluene-d8	%	99	100
Surrogate 4-BFB	%	101	99

svTRH (C10-C40) in Water			
Our Reference		284547-72	284547-73
Your Reference	UNITS	FR-HA1	FR-HA2
Depth		-	-
Date Sampled		1/12/2021	2/12/2021
Type of sample		Water	Water
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
TRH C_{10} - C_{14}	µg/L	<50	<50
TRH C_{15} - C_{28}	µg/L	1,400	1,200
TRH C_{29} - C_{36}	µg/L	<100	<100
Total +ve TRH (C10-C36)	µg/L	1,400	1,200
TRH >C_{10} - C_{16}	µg/L	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50
TRH >C_{16} - C_{34}	µg/L	1,400	1,200
TRH >C_{34} - C_{40}	µg/L	<100	<100
Total +ve TRH (>C10-C40)	µg/L	1,400	1,200
Surrogate o-Terphenyl	%	96	80

PAHs in Water			
Our Reference		284547-72	284547-73
Your Reference	UNITS	FR-HA1	FR-HA2
Depth		-	-
Date Sampled		1/12/2021	2/12/2021
Type of sample		Water	Water
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	08/12/2021	08/12/2021
Naphthalene	µg/L	<1	<1
Acenaphthylene	µg/L	<1	<1
Acenaphthene	µg/L	<1	<1
Fluorene	µg/L	<1	<1
Phenanthrene	µg/L	<1	<1
Anthracene	µg/L	<1	<1
Fluoranthene	µg/L	<1	<1
Pyrene	µg/L	<1	<1
Benzo(a)anthracene	µg/L	<1	<1
Chrysene	µg/L	<1	<1
Benzo(b,j+k)fluoranthene	µg/L	<2	<2
Benzo(a)pyrene	µg/L	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1
Benzo(a)pyrene TEQ	µg/L	<5	<5
Total +ve PAH's	µg/L	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	97	101

Metals in Water - Dissolved			
Our Reference		284547-72	284547-73
Your Reference	UNITS	FR-HA1	FR-HA2
Depth		-	-
Date Sampled		1/12/2021	2/12/2021
Type of sample		Water	Water
Date digested	-	08/12/2021	08/12/2021
Date analysed	-	08/12/2021	08/12/2021
Arsenic - Dissolved	mg/L	<0.05	<0.05
Cadmium - Dissolved	mg/L	<0.01	<0.01
Chromium - Dissolved	mg/L	<0.01	<0.01
Copper - Dissolved	mg/L	0.8	0.8
Lead - Dissolved	mg/L	<0.03	<0.03
Mercury - Dissolved	mg/L	<0.0005	<0.0005
Nickel - Dissolved	mg/L	<0.02	<0.02
Zinc - Dissolved	mg/L	<0.02	<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) **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.
Ext-054	Analysed by MPL Envirolab
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	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. 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	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
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.
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/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
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-022VIC	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Samples analysed at Envirolab Melbourne, NATA site accreditation no. 21192.
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.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	284547-7
Date extracted	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			08/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	89	91
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	89	91
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	78	79
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	81	83
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	100	101
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	94	96
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	94	94
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	117	1	87	85	2	95	94

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-27
Date extracted	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	07/12/2021	07/12/2021		08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	15	<25	<25	0	106	95
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	15	<25	<25	0	106	95
Benzene	mg/kg	0.2	Org-023	[NT]	15	<0.2	<0.2	0	89	80
Toluene	mg/kg	0.5	Org-023	[NT]	15	<0.5	<0.5	0	94	86
Ethylbenzene	mg/kg	1	Org-023	[NT]	15	<1	<1	0	123	109
m+p-xylene	mg/kg	2	Org-023	[NT]	15	<2	<2	0	113	101
o-Xylene	mg/kg	1	Org-023	[NT]	15	<1	<1	0	107	96
Naphthalene	mg/kg	1	Org-023	[NT]	15	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	15	92	85	8	113	104

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-38
Date extracted	-			[NT]	26	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	26	08/12/2021	08/12/2021		08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	26	<25	<25	0	98	87
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	26	<25	<25	0	98	87
Benzene	mg/kg	0.2	Org-023	[NT]	26	<0.2	<0.2	0	84	74
Toluene	mg/kg	0.5	Org-023	[NT]	26	<0.5	<0.5	0	89	77
Ethylbenzene	mg/kg	1	Org-023	[NT]	26	<1	<1	0	103	100
m+p-xylene	mg/kg	2	Org-023	[NT]	26	<2	<2	0	106	92
o-Xylene	mg/kg	1	Org-023	[NT]	26	<1	<1	0	96	87
Naphthalene	mg/kg	1	Org-023	[NT]	26	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	26	86	87	1	101	96

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	284547-51
Date extracted	-			[NT]	33	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	33	08/12/2021	08/12/2021		08/12/2021	08/12/2021
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	33	<25	<25	0	108	79
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	33	<25	<25	0	108	79
Benzene	mg/kg	0.2	Org-023	[NT]	33	<0.2	<0.2	0	94	68
Toluene	mg/kg	0.5	Org-023	[NT]	33	<0.5	<0.5	0	98	71
Ethylbenzene	mg/kg	1	Org-023	[NT]	33	<1	<1	0	114	84
m+p-xylene	mg/kg	2	Org-023	[NT]	33	<2	<2	0	117	87
o-Xylene	mg/kg	1	Org-023	[NT]	33	<1	<1	0	107	78
Naphthalene	mg/kg	1	Org-023	[NT]	33	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	33	95	89	7	110	95

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]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	08/12/2021	08/12/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	42	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	42	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	42	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	42	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	42	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	42	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	42	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	42	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	42	97	103	6	[NT]	[NT]

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]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	08/12/2021	08/12/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	50	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	50	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	50	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	50	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	50	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	50	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	50	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	50	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	50	94	100	6	[NT]	[NT]

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]	60	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	08/12/2021	08/12/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	60	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	60	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	60	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	60	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	60	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	60	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	60	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	60	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	60	108	94	14	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	284547-7
Date extracted	-			07/12/2021	1	7/12/2021	7/12/2021		07/12/2021	07/12/2021
Date analysed	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	96	80
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	70	83
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	190	210	10	91	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	96	80
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	180	200	11	70	83
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	260	300	14	91	#
Surrogate o-Terphenyl	%		Org-020	70	1	73	75	3	123	96

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-27
Date extracted	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	08/12/2021	08/12/2021		08/12/2021	08/12/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	15	<50	<50	0	94	76
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	15	<100	<100	0	73	96
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	15	<100	<100	0	91	105
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	15	<50	<50	0	94	76
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	15	<100	<100	0	73	96
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	15	<100	<100	0	91	105
Surrogate o-Terphenyl	%		Org-020	[NT]	15	73	73	0	122	77

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-38
Date extracted	-			[NT]	26	7/12/2021	7/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	26	08/12/2021	08/12/2021		08/12/2021	08/12/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	26	<50	<50	0	82	79
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	26	<100	<100	0	61	70
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	26	<100	120	18	91	108
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	26	<50	<50	0	82	79
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	26	<100	<100	0	61	70
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	26	<100	200	67	91	108
Surrogate o-Terphenyl	%		Org-020	[NT]	26	74	80	8	105	72

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	284547-51
Date extracted	-			[NT]	33	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	33	08/12/2021	08/12/2021		07/12/2021	07/12/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	33	<50	<50	0	93	81
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	81	82
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	109	127
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	33	<50	<50	0	93	81
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	81	82
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	33	<100	<100	0	109	127
Surrogate o-Terphenyl	%		Org-020	[NT]	33	74	73	1	97	77

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	08/12/2021	08/12/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	42	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	42	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	42	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	42	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	42	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	42	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	42	71	72	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	50	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	50	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	50	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	50	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	50	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	50	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	50	76	75	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	60	07/12/2021	7/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	08/12/2021	08/12/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	60	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	60	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	60	110	150	31	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	60	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	60	140	190	30	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	60	100	140	33	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	60	79	77	3	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	284547-7
Date extracted	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	109
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	125	106
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	132	#
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	<0.1	0	118	101
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	0.3	0.1	100	116	#
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.3	0.1	100	119	#
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	127	#
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	0.1	0.08	22	122	#
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	95	1	112	116	4	106	108

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-27
Date extracted	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	124	107
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	107	113
Fluorene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	114	118
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	130	96
Anthracene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	114	116
Pyrene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	127	123
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	115	107
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	15	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	15	<0.05	<0.05	0	118	104
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	15	102	106	4	114	105

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-38
Date extracted	-			[NT]	26	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	26	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	124	114
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	129	117
Fluorene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	113	111
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	132	120
Anthracene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	121	124
Pyrene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	137	113
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	119	113
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	26	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	26	<0.05	<0.05	0	128	114
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	26	101	99	2	116	107

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	284547-51
Date extracted	-			[NT]	33	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	33	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	90	105
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	105	111
Fluorene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	111	114
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	122	122
Anthracene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	106	104
Pyrene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	109	107
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	103	91
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	33	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	33	<0.05	<0.05	0	130	82
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	33	106	94	12	93	94

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	42	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	42	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	42	96	102	6	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	50	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	50	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	50	105	101	4	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	60	0.3	0.3	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	60	0.9	1.7	62	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	60	0.4	0.6	40	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	60	1.9	3.0	45	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	60	1.9	2.8	38	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	60	1.7	2.1	21	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	60	0.9	1.2	29	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	60	2	2.6	26	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	60	1.4	1.8	25	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	60	0.6	0.8	29	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	60	0.1	0.2	67	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	60	0.8	1.0	22	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	60	103	105	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-7
Date extracted	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	128	124
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	135	117
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	113	127
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	138	130
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	134	112
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	129	125
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	130	122
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	123	127
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	118	111
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	126	132
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	100	1	104	110	6	106	97

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-27
Date extracted	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	110	114
HCB	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	131	114
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	109	125
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	134	122
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	130	106
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	137	121
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	130	120
Endrin	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	129	115
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	110	135
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	132	130
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	15	95	96	1	98	87

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	26	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	26	07/12/2021	07/12/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	26	93	94	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	33	07/12/2021	07/12/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	33	91	89	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	42	98	95	3	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	50	91	91	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	60	96	94	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-7
Date extracted	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	81
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	134
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	107	125
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	130	132
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	132	135
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	99	117
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	125
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	100	1	104	110	6	106	97

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-27
Date extracted	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	111	99
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	108	132
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	128	128
Malathion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	120	118
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	124	118
Parathion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	132	126
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	139	121
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	15	95	96	1	98	87

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	26	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	26	07/12/2021	07/12/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	26	93	94	1	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	33	07/12/2021	07/12/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	33	91	89	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	42	98	95	3	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	50	91	91	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	60	96	94	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-7
Date extracted	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	135	120
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	100	1	104	110	6	106	97

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-27
Date extracted	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	137	120
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	15	95	96	1	98	87

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	26	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	26	07/12/2021	07/12/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	26	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	26	93	94	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	33	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	33	07/12/2021	07/12/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	33	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	33	91	89	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	42	98	95	3	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	50	91	91	0	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	60	96	94	2	[NT]	[NT]

QUALITY CONTROL: Phenoxy Acid Herbicides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[NT]
Date analysed	-			10/12/2021	[NT]	[NT]	[NT]	[NT]	10/12/2021	[NT]
Clopyralid	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	122	[NT]
3,5-Dichlorobenzoic acid	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
o-chlorophenoxy acetic acid	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-CPA	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dicamba	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
MCPP	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
MCPA	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dichlorprop	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-D	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	102	[NT]
Bromoxynil	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Triclopyr	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,5-TP	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,5-T	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	116	[NT]
MCPB	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dinoseb	mg/kg	1	Ext-054	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4-DB	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ioxynil	mg/kg	1	Ext-054	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Picloram	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
DCPA (Chlorthal) Diacid	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acifluorfen	mg/kg	2	Ext-054	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,4,6-T	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2,6-D	mg/kg	0.5	Ext-054	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2.4- DCPA	%		Ext-054	120	[NT]	[NT]	[NT]	[NT]	112	[NT]

QUALITY CONTROL: Carbamates in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	284547-38
Date extracted	-			07/12/2021	33	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			08/12/2021	33	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Carbaryl	mg/kg	0.5	Org-022VIC	<0.5	33	<0.5	<0.5	0	[NT]	[NT]
Carbofuran	mg/kg	0.5	Org-022VIC	<0.5	33	<0.5	<0.5	0	78	84
Molinate	mg/kg	0.5	Org-022VIC	<0.5	33	<0.5	<0.5	0	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022/025	89	33	88	89	1	88	75

QUALITY CONTROL: Synthetic Pyrethroids in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	284547-38
Date extracted	-			07/12/2021	33	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			08/12/2021	33	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Bifenthrin	mg/kg	0.5	Org-022/025	<0.5	33	<0.5	<0.5	0	109	106
Cyfluthrin	mg/kg	2	Org-022/025	<2	33	<2	<2	0	[NT]	[NT]
Cypermethrin	mg/kg	2	Org-022/025	<2	33	<2	<2	0	[NT]	[NT]
Deltamethrin	mg/kg	0.5	Org-022/025	<0.5	33	<0.5	<0.5	0	[NT]	[NT]
Esfenvalerate	mg/kg	0.5	Org-022/025	<0.5	33	<0.5	<0.5	0	[NT]	[NT]
Lamda Cyhalothrin	mg/kg	0.5	Org-022/025	<0.5	33	<0.5	<0.5	0	99	102
Cis Permethrin	mg/kg	0.5	Org-022/025	<0.5	33	<0.5	<0.5	0	[NT]	[NT]
Trans Permethrin	mg/kg	0.5	Org-022/025	<0.5	33	<0.5	<0.5	0	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022/025	89	33	88	89	1	88	75

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	284547-7
Date prepared	-			07/12/2021	1	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			08/12/2021	1	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	101	98
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	107	91
Chromium	mg/kg	1	Metals-020	<1	1	19	18	5	105	108
Copper	mg/kg	1	Metals-020	<1	1	56	52	7	96	126
Lead	mg/kg	1	Metals-020	<1	1	5	4	22	110	128
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	108	109
Nickel	mg/kg	1	Metals-020	<1	1	66	62	6	111	100
Zinc	mg/kg	1	Metals-020	<1	1	37	37	0	112	#

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	284547-27
Date prepared	-			[NT]	15	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	15	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Arsenic	mg/kg	4	Metals-020	[NT]	15	<4	<4	0	110	86
Cadmium	mg/kg	0.4	Metals-020	[NT]	15	<0.4	<0.4	0	115	79
Chromium	mg/kg	1	Metals-020	[NT]	15	6	6	0	113	74
Copper	mg/kg	1	Metals-020	[NT]	15	43	45	5	103	108
Lead	mg/kg	1	Metals-020	[NT]	15	3	3	0	118	84
Mercury	mg/kg	0.1	Metals-021	[NT]	15	<0.1	<0.1	0	94	98
Nickel	mg/kg	1	Metals-020	[NT]	15	66	65	2	118	92
Zinc	mg/kg	1	Metals-020	[NT]	15	28	29	4	119	95

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	284547-38
Date prepared	-			[NT]	26	07/12/2021	07/12/2021		07/12/2021	07/12/2021
Date analysed	-			[NT]	26	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Arsenic	mg/kg	4	Metals-020	[NT]	26	<4	<4	0	101	119
Cadmium	mg/kg	0.4	Metals-020	[NT]	26	<0.4	<0.4	0	105	99
Chromium	mg/kg	1	Metals-020	[NT]	26	28	29	4	103	110
Copper	mg/kg	1	Metals-020	[NT]	26	21	19	10	95	111
Lead	mg/kg	1	Metals-020	[NT]	26	6	6	0	108	106
Mercury	mg/kg	0.1	Metals-021	[NT]	26	<0.1	<0.1	0	103	109
Nickel	mg/kg	1	Metals-020	[NT]	26	43	52	19	109	113
Zinc	mg/kg	1	Metals-020	[NT]	26	25	29	15	109	106

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	284547-51
Date prepared	-			[NT]	33	07/12/2021	07/12/2021		[NT]	07/12/2021
Date analysed	-			[NT]	33	08/12/2021	08/12/2021		[NT]	08/12/2021
Arsenic	mg/kg	4	Metals-020	[NT]	33	<4	<4	0	[NT]	91
Cadmium	mg/kg	0.4	Metals-020	[NT]	33	<0.4	<0.4	0	[NT]	87
Chromium	mg/kg	1	Metals-020	[NT]	33	14	14	0	[NT]	#
Copper	mg/kg	1	Metals-020	[NT]	33	4	3	29	[NT]	107
Lead	mg/kg	1	Metals-020	[NT]	33	4	5	22	[NT]	97
Mercury	mg/kg	0.1	Metals-021	[NT]	33	<0.1	<0.1	0	[NT]	101
Nickel	mg/kg	1	Metals-020	[NT]	33	4	4	0	[NT]	75
Zinc	mg/kg	1	Metals-020	[NT]	33	9	11	20	[NT]	83

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	42	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	42	08/12/2021	08/12/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	42	13	13	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	42	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	42	21	19	10	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	42	1	2	67	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	42	9	9	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	42	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	42	3	3	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	42	11	13	17	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	50	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	50	08/12/2021	08/12/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	50	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	50	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	50	12	8	40	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	50	46	28	49	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	50	29	9	105	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	50	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	50	14	16	13	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	50	35	25	33	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	60	07/12/2021	07/12/2021		[NT]	[NT]
Date analysed	-			[NT]	60	08/12/2021	08/12/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	60	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	60	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	60	15	21	33	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	60	22	41	60	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	60	16	18	12	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	60	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	60	14	21	40	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	60	61	72	17	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			06/12/2021	[NT]	[NT]	[NT]	[NT]	06/12/2021	[NT]
Date analysed	-			07/12/2021	[NT]	[NT]	[NT]	[NT]	07/12/2021	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	117	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	121	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	115	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	102	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate toluene-d8	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-BFB	%		Org-023	101	[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	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	122	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	125	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	122	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	125	[NT]
Surrogate o-Terphenyl	%		Org-020	96	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Naphthalene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Acenaphthylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Fluorene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Phenanthrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Benzo(a)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	91	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: Metals in Water - Dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	284547-73
Date digested	-			08/12/2021	72	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Date analysed	-			08/12/2021	72	08/12/2021	08/12/2021		08/12/2021	08/12/2021
Arsenic - Dissolved	mg/L	0.05	Metals-020	<0.05	72	<0.05	[NT]		110	[NT]
Cadmium - Dissolved	mg/L	0.01	Metals-020	<0.01	72	<0.01	[NT]		106	[NT]
Chromium - Dissolved	mg/L	0.01	Metals-020	<0.01	72	<0.01	[NT]		106	[NT]
Copper - Dissolved	mg/L	0.01	Metals-020	<0.01	72	0.8	[NT]		92	[NT]
Lead - Dissolved	mg/L	0.03	Metals-020	<0.03	72	<0.03	[NT]		107	[NT]
Mercury - Dissolved	mg/L	0.0005	Metals-021	<0.0005	72	<0.0005	<0.0005	0	103	102
Nickel - Dissolved	mg/L	0.02	Metals-020	<0.02	72	<0.02	[NT]		109	[NT]
Zinc - Dissolved	mg/L	0.02	Metals-020	<0.02	72	<0.02	[NT]		109	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

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 284547-7 have caused interference.

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 284547-50 for Cr, Cu and Pb. Therefore a triplicate result has been issued as laboratory sample number 284547-75.
- The laboratory RPD acceptance criteria has been exceeded for 284547-60 for Cu and Ni. Therefore a triplicate result has been issued as laboratory sample number 284547-76.
- # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

PAH_S:
The RPD for duplicate results is accepted due to the non homogenous nature of sample/s 282547-60,60d .

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 284547-3; Chrysotile and Amosite asbestos identified in 6.3951g of fibre cement material >7mm

Sample 284547-3; Chrysotile asbestos identified in 0.0404g of fibrous matted material

Sample 284547-12; Chrysotile asbestos identified in 0.0174g of fibre cement material <7mm

Sample 284547-18; Chrysotile asbestos identified in 0.0015g of loose fibre bundles

Sample 284547-28; Chrysotile asbestos identified in 0.0098g of fibrous matted material

Sample 284547-56; Chrysotile, Amosite and Crocidolite asbestos identified in 0.0070g of fibrous matted material

Sample 284547-58; Chrysotile asbestos identified in 0.0896g of fibrous matted material

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SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Todd Hore

Sample Login Details

Your reference	E34278PH, Terrey Hills
Envirolab Reference	284547
Date Sample Received	03/12/2021
Date Instructions Received	03/12/2021
Date Results Expected to be Reported	10/12/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	72 Soil, 2 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	19
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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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	PCBsin Soil	Phenoxy Acid Herbicidesin Soil	Carbamates in Soil	Synthetic Pyrethroids in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHsin Water	Metals in Water - Dissolved	On Hold
BH101-0.07-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
BH101-0.5-0.95	✓	✓	✓							✓	✓					
BH101-1.5-1.95	✓	✓	✓							✓	✓					
BH101-2.5-2.8	✓	✓	✓							✓	✓					
BH101-3.0-3.4	✓	✓	✓							✓						
BH101-4.5-4.95																✓
BH102-0-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
BH102-0.5-0.7	✓	✓	✓							✓	✓					
BH102-0.7-1.0																✓
BH103-0-0.1	✓	✓	✓	✓	✓	✓				✓	✓					
BH103-0.1-0.5																✓
BH104-0-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
BH104-0.2-0.5	✓	✓	✓							✓						
BH104-0.5-0.95																✓
BH105-0-0.1	✓	✓	✓	✓	✓	✓				✓	✓					
BH105-0.1-0.5	✓	✓	✓							✓	✓					
BH105-0.5-0.95																✓
BH106-0-0.1	✓	✓	✓	✓	✓	✓				✓	✓					
BH106-0.5-0.95	✓	✓	✓							✓	✓					
BH106-1.8-2.0	✓	✓	✓							✓						
BH107-0.1-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
BH107-0.7-1.0	✓	✓	✓							✓						
BH108-0.1-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
BH108-0.4-0.5	✓	✓	✓							✓	✓					
BH108-0.7-1.0	✓	✓	✓							✓						
BH109-0.2-0.41	✓	✓	✓	✓	✓	✓				✓	✓					
BH110-0.09-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
BH110-1.0-1.4	✓	✓	✓							✓	✓					
BH111-0.05-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
BH111-0.4-0.6	✓	✓	✓							✓						
BH112-0.08-0.3	✓	✓	✓	✓	✓	✓				✓	✓					
BH112-0.3-0.6																✓

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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	PCBsin Soil	Phenoxy Acid Herbicidesin Soil	Carbamates in Soil	Synthetic Pyrethroids in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHsin Water	Metals in Water - Dissolved	On Hold
BH113-0.18-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
BH114-0.23-0.4	✓	✓	✓							✓	✓					
BH114-0.4-0.7	✓	✓	✓	✓	✓	✓				✓	✓					
BH115-0.16-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
BH116-0.21-0.55	✓	✓	✓	✓	✓	✓				✓	✓					
BH117-0.12-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
BH117-0.3-0.7	✓	✓	✓							✓	✓					
BH118-0.1-0.3	✓	✓	✓	✓	✓	✓				✓	✓					
BH118-0.3-0.7	✓	✓	✓							✓						
BH119-0.1-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
BH119-0.4-0.8																✓
BH120-0-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
BH120-0.2-0.5	✓	✓	✓							✓	✓					
BH120-0.5-0.6	✓	✓	✓							✓						
BH121-0-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
BH122-0-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
BH123-0-0.5	✓	✓	✓	✓	✓	✓				✓	✓					
BH124-0-0.3	✓	✓	✓	✓	✓	✓				✓	✓					
BH125-0-0.4	✓	✓	✓	✓	✓	✓				✓	✓					
TP126-0-0.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
TP126-0.6-0.7	✓	✓	✓							✓						
TP127-0-0.1	✓	✓	✓	✓	✓	✓				✓	✓					
TP127-0.1-0.3	✓	✓	✓							✓	✓					
TP127-0.3-0.6	✓	✓	✓							✓	✓					
TP127-0.6-0.7	✓	✓	✓							✓						
BH128-0-0.3	✓	✓	✓	✓	✓	✓				✓	✓					
BH128-0.3-0.45	✓	✓	✓							✓						
TP129-0-0.2	✓	✓	✓	✓	✓	✓				✓	✓					
TP129-0.2-0.6	✓	✓	✓							✓	✓					
BH130-0-0.3	✓	✓	✓	✓	✓	✓				✓	✓					
BH130-0.3-0.5	✓	✓	✓							✓						
SDup101	✓	✓	✓	✓	✓	✓				✓						

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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	PCBsin Soil	Phenoxy Acid Herbicidesin Soil	Carbamates in Soil	Synthetic Pyrethroids in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHsin Water	Metals in Water - Dissolved	On Hold
SDup102	✓	✓	✓	✓	✓	✓				✓						
SDup103																✓
SDup104																✓
SDup105																✓
SDup106																✓
TB-S1	✓															
TB-S2	✓															
FR-HA1												✓	✓	✓	✓	
FR-HA2												✓	✓	✓	✓	
TS	✓															

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.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E34278PH Date Results Required: STANDARD Page: 1 of 3	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Todd Hore

Location:	Terrey Hills	Sample Preserved in Esky on Ice
Sampler:	MME	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos (500mL)	Phenoxy acid herbicides	carbamates	synthetic pyrethroids
30/11/2021	1	BH101	0.07-0.2	G, A	1	Fill: silty gravelly sand			X						X			
30/11/2021	2	BH101	0.5-0.95	G, A	1	Fill: sandy clay		X							X			
30/11/2021	3	BH101	1.5-1.95	G, A	1	Fill: sandy clay		X							X			
30/11/2021	4	BH101	2.5-2.8	G, A	0	Fill: sandy clay		X							X			
30/11/2021	5	BH101	3.0-3.4	G, A	0	Fill: sandy clay		X										
30/11/2021	6	BH101	4.5-4.95	G, A	0	XW siltstone												
30/11/2021	7	BH102	0-0.2	G, A	0	Fill: gravelly silty sand			X						X			
30/11/2021	8	BH102	0.5-0.7	G, A	0	Gravelly sandy clay		X							X			
30/11/2021	9	BH102	0.7-1.0	G, A	0	Silty sand												
30/11/2021	10	BH103	0-0.1	G, A	0	Fill: silty clayey sand			X						X			
30/11/2021	11	BH103	0.1-0.5	G, A	0	Gravelly silty sand												
30/11/2021	12	BH104	0-0.2	G, A	0	Fill: gravelly silty sand			X						X			
30/11/2021	13	BH104	0.2-0.5	G, A	0	Silty clayey sand		X										
30/11/2021	14	BH104	0.5-0.95	G	0	Silty clayey sand												
30/11/2021	15	BH105	0-0.1	G, A	0	Fill: silty gravelly sand			X						X			
30/11/2021	16	BH105	0.1-0.5	G, A	0	Fill: silty sand		X							X			
30/11/2021	17	BH105	0.5-0.95	G, A	0	XW sandstone												
30/11/2021	18	BH106	0-0.1	G, A	0	Fill: silty gravelly sand			X						X			
30/11/2021	19	BH106	0.5-0.95	G, A	0	Fill: silty sand		X							X			
30/11/2021	20	BH106	1.8-2.0	G	0	Gravelly silty sand		X										
30/11/2021	21	BH107	0.1-0.2	G, A	0	Fill: gravelly silty sand			X						X			
30/11/2021	22	BH107	0.7-1.0	G, A	1	Silty sand		X										
30/11/2021	23	BH108	0.1-0.2	G, A	1	Fill: silty sand			X						X			
30/11/2021	24	BH108	0.4-0.5	G, A	0	Fill: silty sandy clay		X							X			
30/11/2021	25	BH108	0.7-1.0	G, A	0	Silty sand		X										

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag

Relinquished By:	Date: 3/12/21	Time: 2:30pm	Received By:	Date:
Hore	Chatswood NSW Ph: (02) 9910 6200			

Job No: 284547

Date Received: 03/12/21

Time Received: 15:30

Received By:

Temp: Cool/Ambient

Cooling: Ice/Ice pack

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD	JKE Job Number: E34278PH	JKEnvironments
12 ASHLEY STREET		REAR OF 115 WICKS ROAD
CHATSWOOD NSW 2067	Date Results Required: STANDARD	MACQUARIE PARK, NSW 2113
P: (02) 99106200		P: 02-9888 5000 F: 02-9888 5001
F: (02) 99106201	Page: 2 of 3	Attention: Todd Hore
Attention: Aileen		

Location:	Terrey Hills	Sample Preserved in Esky on Ice
Sampler:	MME	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos (500mL)	Phenoxy acid herbicides	carbamates	synthetic pyrethroids
01/12/2021	26	BH109	0.2-0.41	G, A	0	Fill: silty clay			X						X			
01/12/2021	27	BH110	0.09-0.4	G, A	0	Fill: silty clayey sand			X						X			
01/12/2021	28	BH110	1.0-1.4	G, A	0	Fill: silty sandy clay		X							X			
01/12/2021	29	BH111	0.05-0.4	G, A	0	Fill: silty clayey gravel			X						X			
01/12/2021	30	BH111	0.4-0.6	G, A	0	silty clayey sand		X										
01/12/2021	31	BH112	0.08-0.3	G, A	0	Fill: silty gravelly sand			X						X			
01/12/2021	32	BH112	0.3-0.6	G, A	0	silty clayey sand												
01/12/2021	33	BH113	0.18-0.5	G, A	0	silty sandy clay			X						X	X	X	X
01/12/2021	34	BH114	0.23-0.4	G, A	0	Fill: silty clayey sand		X							X			
01/12/2021	35	BH114	0.4-0.7	G, A	0	silty clayey sand			X						X			
01/12/2021	36	BH115	0.16-0.4	G, A	0	Fill: silty gravelly sand			X						X			
01/12/2021	37	BH116	0.21-0.55	G, A	0	gravelly sandy clay			X						X			
01/12/2021	38	BH117	0.12-0.3	G, A	0	Fill: gravelly silty sand			X						X	X	X	X
01/12/2021	39	BH117	0.3-0.7	G, A	0	Fill: silty gravelly sand		X							X			
01/12/2021	40	BH118	0.1-0.3	G, A	0	Fill: silty sand			X						X			
01/12/2021	41	BH118	0.3-0.7	G, A	0	Silty clayey sand		X										
01/12/2021	42	BH119	0.1-0.4	G, A	0	Fill: silty sand			X						X			
01/12/2021	43	BH119	0.4-0.8	G, A	0	Silty clayey sand												
02/12/2021	44	BH120	0-0.2	G, A	0	Fill: silty clayey sand			X						X			
02/12/2021	45	BH120	0.2-0.5	G, A	0	Fill: silty sand		X							X			
02/12/2021	46	BH120	0.5-0.6	G	0	silty clay		X										
02/12/2021	47	BH121	0-0.4	G, A	0	Fill: silty clayey sand			X						X			
02/12/2021	48	BH122	0-0.4	G, A	0	Fill: silty clayey sand			X						X			
02/12/2021	49	BH123	0-0.5	G, A	0	Fill: silty clayey sand			X						X			
02/12/2021	50	BH124	0-0.3	G, A	0	Fill: silty clayey sand			X						X			

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag		
Relinquished By: Hore	Date: 3/12/21	Time: 2:30pm	Received By:	Date:

Chatswood NSW
PH: (02) 9910...

Job No: 284547

Date Received: 03/12/21
Time Received: 15:30
Received By:
Temp: Cool/Ambient
Cooling: Ice/Pack

SAMPLE AND CHAIN OF CUSTODY FORM

TO:
ENVIROLAB SERVICES PTY LTD
12 ASHLEY STREET
CHATSWOOD NSW 2067
P: (02) 99106200
F: (02) 99106201

Attention: Aileen

JKE Job Number: E34278PH
Date Results Required: STANDARD
Page: 3 of 3

FROM:
JKEnvironments
REAR OF 115 WICKS ROAD
MACQUARIE PARK, NSW 2113
P: 02-9888 5000 F: 02-9888 5001
Attention: Todd Hore

Location: Terrey Hills
Sampler: MME

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos (500mL)	Phenoxy acid herbicides	carbamates	synthetic pyrethroids
02/12/2021	51	BH125	0-0.4	G, A	0	Fill: silty sand			X						X			
02/12/2021	52	TP126	0-0.5	G, A	0	Fill: silty sand			X						X	X	X	X
02/12/2021	53	TP126	0.6-0.7	G, A	0	silty sand		X										
02/12/2021	54	TP127	0-0.1	G, A	0	Fill: silty sand			X						X			
02/12/2021	55	TP127	0.1-0.3	G, A	0	Fill: silty clayey sand		X							X			
02/12/2021	56	TP127	0.3-0.6	G, A	0	Fill: silty sand		X							X			
02/12/2021	57	TP127	0.6-0.7	G, A	0	silty sand		X										
02/12/2021	58	BH128	0-0.3	G, A	0	Fill: silty sand			X						X			
02/12/2021	59	BH128	0.3-0.45	G, A	0	silty clayey sand		X										
02/12/2021	60	TP129	0-0.2	G, A	0	Fill: silty sand			X						X			
02/12/2021	61	TP129	0.2-0.6	G, A	0	Fill: silty clayey sand		X							X			
02/12/2021	62	BH130	0-0.3	G, A	0	Fill: silty clayey sand			X						X			
02/12/2021	63	BH130	0.3-0.5	G, A	0	silty sand		X										
30/11/2021	64	SDup101	-	G, A	-	Duplicate			X									
30/11/2021	65	SDup102	-	G, A	-	Duplicate			X									
01/12/2021	66	SDup103	-	G, A	-	Duplicate			X									
02/12/2021	67	SDup104	-	G, A	-	Duplicate			X									
02/12/2021	68	SDup105	-	G, A	-	Duplicate												
02/12/2021	69	SDup106	-	G, A	-	Duplicate												
30/11/2021	70	TB-S1	-	G	-	Trip blank								X				
02/12/2021	71	TB-S2	-	G	-	Trip blank								X				
01/12/2021	72	FR-HA1	-	G	-	Field rinsate		X										
02/12/2021	73	FR-HA2	-	G	-	Field rinsate		X										
30/11/2021	74	TS	-	G	-	Trip spike								X				
	75	~~TS EXTRA~~ NZ																

Remarks (comments/detection limits required):
Please forward Sdup 103 and Sdup 104 to Melbourne

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date: 3/12/21	Time: 2:30pm	Received By:	Date:
Hore		Chatswood NSW Ph: (02) 9910		

Job No: 284547
Date Received: 03/12/21
Time Received: 15:30
Received By: JW
Temp: Cool/Ambient

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CERTIFICATE OF ANALYSIS 284547-A

Client Details

Client	JK Environments
Attention	Todd Hore
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E34278PH, Terrey Hills**
Number of Samples	additional analysis
Date samples received	03/12/2021
Date completed instructions received	10/12/2021

Analysis Details

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

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

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

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

Report Details

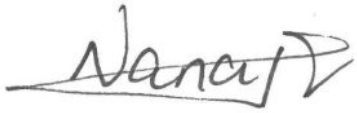
Date results requested by	17/12/2021
Date of Issue	17/12/2021

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Results Approved By
Diego Bigolin, Inorganics Supervisor
Hannah Nguyen, Metals Supervisor
Josh Williams, LC Supervisor
Liam Timmins, Chemist
Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

TCLP Preparation - Acid						
Our Reference		284547-A-1	284547-A-2	284547-A-7	284547-A-12	284547-A-15
Your Reference	UNITS	BH101	BH101	BH102	BH104	BH105
Depth		0.07-0.2	0.5-0.95	0-0.2	0-0.2	0-0.1
Date Sampled		30/11/2021	30/11/2021	30/11/2021	30/11/2021	30/11/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
pH of soil for fluid# determ.	pH units	8.9	7.5	10.1	8.9	8.9
pH of soil TCLP (after HCl)	pH units	1.3	1.3	1.4	1.4	1.3
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.1	5.5	5.5	4.9

TCLP Preparation - Acid						
Our Reference		284547-A-26	284547-A-27	284547-A-29	284547-A-31	284547-A-51
Your Reference	UNITS	BH109	BH110	BH111	BH112	BH125
Depth		0.2-0.41	0.09-0.4	0.05-0.4	0.08-0.3	0-0.4
Date Sampled		1/12/2021	1/12/2021	1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
pH of soil for fluid# determ.	pH units	9.1	8.6	8.8	8.0	7.6
pH of soil TCLP (after HCl)	pH units	1.2	1.3	1.3	1.4	1.4
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.1	5.1	5.0	4.9

TCLP Preparation - Acid			
Our Reference		284547-A-54	284547-A-60
Your Reference	UNITS	TP127	TP129
Depth		0-0.1	0-0.2
Date Sampled		2/12/2021	2/12/2021
Type of sample		Soil	Soil
pH of soil for fluid# determ.	pH units	7.9	8.8
pH of soil TCLP (after HCl)	pH units	1.4	1.4
Extraction fluid used	-	1	1
pH of final Leachate	pH units	5.1	5.1

PAHs in TCLP (USEPA 1311)						
Our Reference		284547-A-2	284547-A-7	284547-A-12	284547-A-54	284547-A-60
Your Reference	UNITS	BH101	BH102	BH104	TP127	TP129
Depth		0.5-0.95	0-0.2	0-0.2	0-0.1	0-0.2
Date Sampled		30/11/2021	30/11/2021	30/11/2021	2/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	0.001	<0.001	<0.001	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	0.001	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	90	89	86	85	83

Metals from Leaching Fluid pH 2.9 or 5						
Our Reference		284547-A-1	284547-A-2	284547-A-15	284547-A-26	284547-A-27
Your Reference	UNITS	BH101	BH101	BH105	BH109	BH110
Depth		0.07-0.2	0.5-0.95	0-0.1	0.2-0.41	0.09-0.4
Date Sampled		30/11/2021	30/11/2021	30/11/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Nickel	mg/L	0.1	0.05	0.07	0.2	0.09

Metals from Leaching Fluid pH 2.9 or 5				
Our Reference		284547-A-29	284547-A-31	284547-A-51
Your Reference	UNITS	BH111	BH112	BH125
Depth		0.05-0.4	0.08-0.3	0-0.4
Date Sampled		1/12/2021	1/12/2021	2/12/2021
Type of sample		Soil	Soil	Soil
Date extracted	-	15/12/2021	15/12/2021	15/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021
Nickel	mg/L	0.4	0.2	<0.02

Misc Inorg - Soil						
Our Reference		284547-A-1	284547-A-15	284547-A-27	284547-A-29	284547-A-31
Your Reference	UNITS	BH101	BH105	BH110	BH111	BH112
Depth		0.07-0.2	0-0.1	0.09-0.4	0.05-0.4	0.08-0.3
Date Sampled		30/11/2021	30/11/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
pH 1:5 soil:water	pH Units	9.1	8.6	8.1	8.8	8.5

CEC						
Our Reference		284547-A-1	284547-A-15	284547-A-27	284547-A-29	284547-A-31
Your Reference	UNITS	BH101	BH105	BH110	BH111	BH112
Depth		0.07-0.2	0-0.1	0.09-0.4	0.05-0.4	0.08-0.3
Date Sampled		30/11/2021	30/11/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
Date analysed	-	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
Exchangeable Ca	meq/100g	15	9.7	19	12	8.9
Exchangeable K	meq/100g	0.5	0.5	0.4	0.3	0.3
Exchangeable Mg	meq/100g	4.8	2.2	3.4	3.3	2.9
Exchangeable Na	meq/100g	1.7	0.1	0.2	0.3	0.2
Cation Exchange Capacity	meq/100g	22	13	23	16	12

Clay 50-120g						
Our Reference		284547-A-1	284547-A-15	284547-A-27	284547-A-29	284547-A-31
Your Reference	UNITS	BH101	BH105	BH110	BH111	BH112
Depth		0.07-0.2	0-0.1	0.09-0.4	0.05-0.4	0.08-0.3
Date Sampled		30/11/2021	30/11/2021	1/12/2021	1/12/2021	1/12/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Date analysed	-	16/12/2021	16/12/2021	16/12/2021	16/12/2021	16/12/2021
Clay in soils <2µm	% (w/w)	5	8	5	6	7

Method ID	Methodology Summary
AS1289.3.6.3	Determination Particle Size Analysis using AS1289.3.6.3 and AS1289.3.6.1 and in house method INORG-107. Clay fraction at <2µm reported.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
INORG-004	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311. 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.
Metals-020	Determination of various metals by ICP-AES following buffer determination as per USEPA 1311 and hence AS 4439.3. Extraction Fluid 1 refers to the pH 5.0 buffer and Extraction Fluid 2 is the pH 2.9 buffer.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	284547-A-7
Date extracted	-			16/12/2021	2	14/12/2021	14/12/2021		14/12/2021	14/12/2021
Date analysed	-			16/12/2021	2	15/12/2021	15/12/2021		15/12/2021	15/12/2021
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	99	123
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	0.001	0	115	114
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	93	120
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	0.001	0.003	100	128	120
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	118	106
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	123	110
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	115	102
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	2	<0.002	<0.002	0	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	124	114
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	2	<0.001	<0.001	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	107	2	90	89	1	105	88

QUALITY CONTROL: Metals from Leaching Fluid pH 2.9 or 5						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	284547-A-15
Date extracted	-			15/12/2021	1	15/12/2021	15/12/2021		15/12/2021	15/12/2021
Date analysed	-			15/12/2021	1	15/12/2021	15/12/2021		15/12/2021	15/12/2021
Nickel	mg/L	0.02	Metals-020	<0.02	1	0.1	0.1	0	109	103

QUALITY CONTROL: Metals from Leaching Fluid pH 2.9 or 5						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	2	15/12/2021	15/12/2021		[NT]	[NT]
Date analysed	-			[NT]	2	15/12/2021	15/12/2021		[NT]	[NT]
Nickel	mg/L	0.02	Metals-020	[NT]	2	0.05	0.04	22	[NT]	[NT]

QUALITY CONTROL: Misc Inorg - Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
Date analysed	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: CEC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	284547-A-15
Date prepared	-			16/12/2021	1	16/12/2021	16/12/2021		16/12/2021	16/12/2021
Date analysed	-			16/12/2021	1	16/12/2021	16/12/2021		16/12/2021	16/12/2021
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	1	15	14	7	118	#
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	1	0.5	0.4	22	122	104
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	1	4.8	4.2	13	121	121
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	1	1.7	1.8	6	125	124

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

pH/EC
Samples were out of the recommended holding time for this analysis.

CEC - # Percent recovery is not applicable due to the high concentration of the element in the sample. However an acceptable recovery was obtained for the LCS.

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SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Todd Hore

Sample Login Details

Your reference	E34278PH, Terrey Hills
Envirolab Reference	284547-A
Date Sample Received	03/12/2021
Date Instructions Received	10/12/2021
Date Results Expected to be Reported	17/12/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	19
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Nickel	Misc Inorg - Soil	CEC	Clay 50-120g	On Hold
BH101-0.07-0.2	✓																		✓	✓	✓	✓	
BH101-0.5-0.95	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓				
BH101-1.5-1.95																							✓
BH101-2.5-2.8																							✓
BH101-3.0-3.4																							✓
BH101-4.5-4.95																							✓
BH102-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
BH102-0.5-0.7																							✓
BH102-0.7-1.0																							✓
BH103-0-0.1																							✓
BH103-0.1-0.5																							✓
BH104-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
BH104-0.2-0.5																							✓
BH104-0.5-0.95																							✓
BH105-0-0.1	✓																		✓	✓	✓	✓	
BH105-0.1-0.5																							✓
BH105-0.5-0.95																							✓
BH106-0-0.1																							✓
BH106-0.5-0.95																							✓
BH106-1.8-2.0																							✓

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Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Nickel	Misc Inorg - Soil	CEC	Clay 50-120g	On Hold
BH107-0.1-0.2																							✓
BH107-0.7-1.0																							✓
BH108-0.1-0.2																							✓
BH108-0.4-0.5																							✓
BH108-0.7-1.0																							✓
BH109-0.2-0.41	✓																		✓				
BH110-0.09-0.4	✓																		✓	✓	✓	✓	
BH110-1.0-1.4																							✓
BH111-0.05-0.4	✓																		✓	✓	✓	✓	
BH111-0.4-0.6																							✓
BH112-0.08-0.3	✓																		✓	✓	✓	✓	
BH112-0.3-0.6																							✓
BH113-0.18-0.5																							✓
BH114-0.23-0.4																							✓
BH114-0.4-0.7																							✓
BH115-0.16-0.4																							✓
BH116-0.21-0.55																							✓
BH117-0.12-0.3																							✓
BH117-0.3-0.7																							✓
BH118-0.1-0.3																							✓

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Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Nickel	Misc Inorg - Soil	CEC	Clay 50-120g	On Hold
BH118-0.3-0.7																							✓
BH119-0.1-0.4																							✓
BH119-0.4-0.8																							✓
BH120-0-0.2																							✓
BH120-0.2-0.5																							✓
BH120-0.5-0.6																							✓
BH121-0-0.4																							✓
BH122-0-0.4																							✓
BH123-0-0.5																							✓
BH124-0-0.3																							✓
BH125-0-0.4	✓																		✓				
TP126-0-0.5																							✓
TP126-0.6-0.7																							✓
TP127-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						
TP127-0.1-0.3																							✓
TP127-0.3-0.6																							✓
TP127-0.6-0.7																							✓
BH128-0-0.3																							✓
BH128-0.3-0.45																							✓
TP129-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓						

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Sample ID	TCLP Preparation - Acid	Naphthalene in TCLP	Acenaphthylene in TCLP	Acenaphthene in TCLP	Fluorene in TCLP	Phenanthrene in TCLP	Anthracene in TCLP	Fluoranthene in TCLP	Pyrene in TCLP	Benzo(a)anthracene in TCLP	Chrysene in TCLP	Benzo(bjk)fluoranthene in TCLP	Benzo(a)pyrene in TCLP	Indeno(1,2,3-c,d)pyrene - TCLP	Dibenzo(a,h)anthracene in TCLP	Benzo(g,h,i)perylene in TCLP	Total +vePAH's	Surrogate p-Terphenyl-d14	Nickel	Misc Inorg - Soil	CEC	Clay 50-120g	On Hold
TP129-0.2-0.6																							✓
BH130-0-0.3																							✓
BH130-0.3-0.5																							✓
SDup101																							✓
SDup102																							✓
SDup103																							✓
SDup104																							✓
SDup105																							✓
SDup106																							✓
TB-S1																							✓
TB-S2																							✓
FR-HA1																							✓
FR-HA2																							✓
TS																							✓
BH124 - [TRIPLICATE]-0-0.3																							✓
TP129 - [TRIPLICATE]-0-0.2																							✓

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.

Ming To

Subject: FW: 284547

Ref: 284547-A.
TAT: Standard
Due: 20/12/2021
MT.

284547-A

From: Todd Hore <THore@jkenvironments.com.au>
Sent: Monday, 13 December 2021 8:57 AM
To: Aileen Hie <AHie@envirolab.com.au>
Subject: 284547

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

Hey Aileen,
Can you please schedule the following additional analyses for E34278PH, Terrey Hills:

- 284547-1 – TCLP nickel, pH, CEC, clay content;
- 284547-2 – TCLP nickel+ PAHs;
- 284547-7 – TCLP PAHs;
- 284547-12 – TCLP PAHs;
- 284547-15 – TCLP nickel, pH, CEC, clay content;
- 284547-26 – TCLP nickel;
- 284547-27 – TCLP nickel, pH, CEC, clay content;
- 284547-29 – TCLP nickel, pH, CEC, clay content;
- 284547-31 – TCLP nickel, pH, CEC, clay content;
- 284547-51 – TCLP nickel;
- 284547-54 – TCLP PAHs;
- 284547-60 – TCLP PAHs;

Please undertake the above on a standard turnaround.

Regards
Todd Hore
Senior Associate | Environmental Engineer

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D: 0414 863 307
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JKEnvironments

This email and any attachments are confidential and may be privileged in which case neither is intended to be waived. If you have received this message in error, please notify us and remove it from your system. It is your responsibility to check any attachments for viruses and defects before opening or sending them on. At the Company's discretion we may send a paper copy for confirmation. In the event of any discrepancy between paper and electronic versions the paper version is to take precedence.

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CERTIFICATE OF ANALYSIS 29114

Client Details

Client	JK Environments
Attention	Todd Hore
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E34278PH**
Number of Samples	2 Soil
Date samples received	07/12/2021
Date completed instructions received	07/12/2021

Analysis Details

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

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

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

Report Details

Date results requested by	13/12/2021
Date of Issue	14/12/2021
Reissue Details	This report supersedes 29114_R00 due to sample ID correction.

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Results Approved By
Chris De Luca, Operations Manager

Authorised By

Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		29114-1	29114-2
Your Reference	UNITS	SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	10/12/2021	10/12/2021
vTRH C_6 - C_9	mg/kg	<25	<25
vTRH C_6 - C_{10}	mg/kg	<25	<25
TRH 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 BTEX	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	100

TRH Soil C10-C40 NEPM			
Our Reference	UNITS	29114-1	29114-2
Your Reference		SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	93	94

PAHs in Soil			
Our Reference	UNITS	29114-1	29114-2
Your Reference		SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.2
Pyrene	mg/kg	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j&k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.09
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	0.4
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (Half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc (PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d_{14}	%	102	100

OCP in Soil			
Our Reference		29114-1	29114-2
Your Reference	UNITS	SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
alpha-BHC	mg/kg	<0.1	<0.1
Hexachlorobenzene	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve reported Aldrin + Dieldrin	mg/kg	<0.1	<0.1
Total +ve reported DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate 2-chlorophenol-d4	%	60	62

OP in Soil			
Our Reference		29114-1	29114-2
Your Reference	UNITS	SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
Azinphos-methyl	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Dichlorovos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Surrogate 2-chlorophenol-d4	%	60	62

PCBs in Soil			
Our Reference		29114-1	29114-2
Your Reference	UNITS	SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date extracted	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate 2-fluorobiphenyl	%	102	100

Acid Extractable metals in soil			
Our Reference		29114-1	29114-2
Your Reference	UNITS	SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date digested	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
Arsenic	mg/kg	5	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	26	28
Copper	mg/kg	18	16
Lead	mg/kg	15	13
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	35	16
Zinc	mg/kg	45	39

Moisture			
Our Reference		29114-1	29114-2
Your Reference	UNITS	SDUP103	SDUP104
Date Sampled		30/11/2021	01/12/2021
Type of sample		Soil	Soil
Date prepared	-	08/12/2021	08/12/2021
Date analysed	-	09/12/2021	09/12/2021
Moisture	%	16	14

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105°C for a minimum of 12 hours.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	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. 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	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD or GC-MS. 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	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Note, For OCs 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.

Method ID	Methodology Summary
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-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-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by 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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			10/12/2021	[NT]	[NT]	[NT]	[NT]	10/12/2021	[NT]
vTRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	82	[NT]
vTRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	82	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	73	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	83	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	84	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: TRH Soil C10-C40 NEPM					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[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]	107	[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]	107	[NT]
Surrogate o-Terphenyl	%		Org-020	99	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[NT]
Naphthalene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Acenaphthylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Fluorene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzo(b,j&k)fluoranthene	mg/kg	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022	<0.05	[NT]	[NT]	[NT]	[NT]	96	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022	98	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: OCP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[NT]
alpha-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Hexachlorobenzene	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
gamma-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
delta-BHC	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
alpha-chlordane	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Dieldrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Endrin	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Methoxychlor	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022	62	[NT]	[NT]	[NT]	[NT]	60	[NT]

QUALITY CONTROL: OP in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[NT]
Azinphos-methyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Diazinon	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Dichlorovos	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Fenitrothion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Malathion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-chlorophenol-d4	%		Org-022	62	[NT]	[NT]	[NT]	[NT]	60	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[NT]
Aroclor 1016	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Aroclor 1260	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-fluorobiphenyl	%		Org-022	102	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date digested	-			08/12/2021	[NT]	[NT]	[NT]	[NT]	08/12/2021	[NT]
Date analysed	-			09/12/2021	[NT]	[NT]	[NT]	[NT]	09/12/2021	[NT]
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	[NT]	[NT]	104	[NT]
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Todd Hore

Sample Login Details

Your reference	E34278PH
Envirolab Reference	29114
Date Sample Received	07/12/2021
Date Instructions Received	07/12/2021
Date Results Expected to be Reported	13/12/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	13.8
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Pamela Adams	Chris De Luca
Phone: 03 9763 2500	**Phone: 03 9763 2500**
Fax: 03 9763 2633	**Fax: 03 9763 2633**
Email: padams@envirolab.com.au	**Email: cdeluca@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
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Sample ID	vTRH(C6-C10)/BTEXN in Soil	TRH Soil C10-C40 NEPM	PAHs in Soil	OCP in Soil	OP in Soil	PCBsin Soil	Acid Extractable metalsin soil
SDUP102	✓	✓	✓	✓	✓	✓	✓
SDUP103	✓	✓	✓	✓	✓	✓	✓

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.

ENVIROLAB — Croydon South VIC 3136 Ph. (03) 9763 2500

Job No: 29114

Date Received: 7/12/21
Time Received: 12:30pm
Received By: KS
Temp: Cool/Ambient
Cooling: Ice/Ice-pack
Security: Intact/Broken/None

13.8C

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E34278PH Date Results Required: STANDARD Page: 3 of 3	**FROM:** JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Todd Hore

Location: Terrey Hills
Sampler: MME

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos (500mL)	Phenoxy acid herbicides	carbamates	synthetic pyrethroids
02/12/2021	51	BH125	0-0.4	G, A	0	Fill: silty sand			X						X			
02/12/2021	52	TP126	0-0.5	G, A	0	Fill: silty sand			X						X	X	X	X
02/12/2021	53	TP126	0.6-0.7	G, A	0	silty sand		X										
02/12/2021	54	TP127	0-0.1	G, A	0	Fill: silty sand			X						X			
02/12/2021	55	TP127	0.1-0.3	G, A	0	Fill: silty clayey sand		X							X			
02/12/2021	56	TP127	0.3-0.6	G, A	0	Fill: silty sand		X							X			
02/12/2021	57	TP127	0.6-0.7	G, A	0	silty sand		X										
02/12/2021	58	BH128	0-0.3	G, A	0	Fill: silty sand			X						X			
02/12/2021	59	BH128	0.3-0.45	G, A	0	silty clayey sand		X										
02/12/2021	60	TP129	0-0.2	G, A	0	Fill: silty sand			X						X			
02/12/2021	61	TP129	0.2-0.6	G, A	0	Fill: silty clayey sand		X							X			
02/12/2021	62	BH130	0-0.3	G, A	0	Fill: silty clayey sand			X						X			
02/12/2021	63	BH130	0.3-0.5	G, A	0	silty sand		X										
30/11/2021	64	SDup101	-	G, A	-	Duplicate			X									
30/11/2021	65	SDup102	-	G, A	-	Duplicate			X									
01/12/2021	66	SDup103	-	G, A	-	Duplicate			X									
02/12/2021	67	SDup104	-	G, A	-	Duplicate			X									
02/12/2021	68	SDup105	-	G, A	-	Duplicate												
02/12/2021	69	SDup106	-	G, A	-	Duplicate												
30/11/2021	70	TB-S1	-	G	-	Trip blank								X				
02/12/2021	71	TB-S2	-	G	-	Trip blank								X				
01/12/2021	72	FR-HA1	-	G	-	Field rinsate		X										
02/12/2021	73	FR-HA2	-	G	-	Field rinsate		X										
30/11/2021	74	TS	-	G	-	Trip spike								X				
	75	~~TS EXTRA~~ NZ																

Remarks (comments/detection limits required):
Please forward Sdup 103 and Sdup 104 to Melbourne

Sample Containers:
G - 250mg Glass Jar
A - Ziplock Asbestos Bag
P - Plastic Bag

Relinquished By:	Date: 3/12/21	Time: 2:30pm	Received By:	Date:
T Hore		Chatswood NSW Ph: (02) 9910		

Relinquished: ELS Syd
K. Hore
6/12/21

Job No: 284547
Date Received: 03/12/21
Time Received: 15:30
Received By: M
Temp: Cool/Ambient

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 285130

Client Details

Client	JK Environments
Attention	Todd Hore
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E34278PH, Terrey Hills**
Number of Samples	6 Water
Date samples received	10/12/2021
Date completed instructions received	10/12/2021

Analysis Details

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

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

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

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

Report Details

Date results requested by	17/12/2021
Date of Issue	16/12/2021

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Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Priya Samarawickrama, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		285130-1	285130-2	285130-3	285130-4	285130-5
Your Reference	UNITS	MW101A	MW102	MW105	WDup1	TS-W
Date Sampled		08/12/2021	08/12/2021	08/12/2021	08/12/2021	08/12/2021
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	14/12/2021	14/12/2021	14/12/2021	14/12/2021	14/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021	15/12/2021
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	[NA]
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	[NA]
Benzene	µg/L	<1	<1	<1	<1	120%
Toluene	µg/L	<1	<1	<1	<1	110%
Ethylbenzene	µg/L	<1	<1	<1	<1	111%
m+p-xylene	µg/L	<2	<2	<2	<2	110%
o-xylene	µg/L	<1	<1	<1	<1	110%
Naphthalene	µg/L	<1	<1	<1	<1	[NT]
Surrogate Dibromofluoromethane	%	103	103	102	103	104
Surrogate toluene-d8	%	99	100	99	99	103
Surrogate 4-BFB	%	111	110	109	110	107

vTRH(C6-C10)/BTEXN in Water		
Our Reference		285130-6
Your Reference	UNITS	TB-W
Date Sampled		08/12/2021
Type of sample		Water
Date extracted	-	14/12/2021
Date analysed	-	15/12/2021
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	%	103
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	110

svTRH (C10-C40) in Water					
Our Reference		285130-1	285130-2	285130-3	285130-4
Your Reference	UNITS	MW101A	MW102	MW105	WDup1
Date Sampled		08/12/2021	08/12/2021	08/12/2021	08/12/2021
Type of sample		Water	Water	Water	Water
Date extracted	-	14/12/2021	14/12/2021	14/12/2021	14/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021
TRH C_{10} - C_{14}	µg/L	71	<50	<50	69
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	70	<50	<50	70
TRH >C_{10} - C_{16}	µg/L	85	<50	<50	79
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	85	<50	<50	79
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	80	<50	<50	80
Surrogate o-Terphenyl	%	80	90	78	73

PAHs in Water - Low Level					
Our Reference		285130-1	285130-2	285130-3	285130-4
Your Reference	UNITS	MW101A	MW102	MW105	WDup1
Date Sampled		08/12/2021	08/12/2021	08/12/2021	08/12/2021
Type of sample		Water	Water	Water	Water
Date extracted	-	14/12/2021	14/12/2021	14/12/2021	14/12/2021
Date analysed	-	15/12/2021	15/12/2021	15/12/2021	15/12/2021
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	84	88	80	79

HM in water - dissolved					
Our Reference	UNITS	285130-1	285130-2	285130-3	285130-4
Your Reference		MW101A	MW102	MW105	WDup1
Date Sampled		08/12/2021	08/12/2021	08/12/2021	08/12/2021
Type of sample		Water	Water	Water	Water
Date prepared	-	14/12/2021	14/12/2021	14/12/2021	14/12/2021
Date analysed	-	14/12/2021	14/12/2021	14/12/2021	14/12/2021
Arsenic-Dissolved	µg/L	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	1	<1
Copper-Dissolved	µg/L	4	1	2	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	5	1	3	5
Zinc-Dissolved	µg/L	41	6	12	27

Miscellaneous Inorganics				
Our Reference	UNITS	285130-1	285130-2	285130-3
Your Reference		MW101A	MW102	MW105
Date Sampled		08/12/2021	08/12/2021	08/12/2021
Type of sample		Water	Water	Water
Date prepared	-	10/12/2021	10/12/2021	10/12/2021
Date analysed	-	10/12/2021	10/12/2021	10/12/2021
pH	pH Units	5.8	4.6	4.4
Electrical Conductivity	µS/cm	460	300	520

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			14/12/2021	1	14/12/2021	15/12/2021		14/12/2021	[NT]
Date analysed	-			15/12/2021	1	15/12/2021	15/12/2021		15/12/2021	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	<10	<10	0	127	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	<10	<10	0	127	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	125	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	124	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	131	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	128	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	126	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	103	1	103	102	1	96	[NT]
Surrogate toluene-d8	%		Org-023	98	1	99	98	1	100	[NT]
Surrogate 4-BFB	%		Org-023	109	1	111	118	6	104	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			14/12/2021	[NT]	[NT]	[NT]	[NT]	14/12/2021	[NT]
Date analysed	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	120	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	125	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	125	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	120	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	125	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	125	[NT]
Surrogate o-Terphenyl	%		Org-020	107	[NT]	[NT]	[NT]	[NT]	87	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			14/12/2021	[NT]	[NT]	[NT]	[NT]	14/12/2021	[NT]
Date analysed	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	99	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	128	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	123	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	124	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	107	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	285130-2
Date prepared	-			14/12/2021	1	14/12/2021	14/12/2021		14/12/2021	14/12/2021
Date analysed	-			14/12/2021	1	14/12/2021	14/12/2021		14/12/2021	14/12/2021
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	97	96
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	98	99
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	96	94
Copper-Dissolved	µg/L	1	Metals-022	<1	1	4	4	0	95	92
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	96	93
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	5	5	0	96	94
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	41	41	0	96	96

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	4	14/12/2021	14/12/2021		[NT]	[NT]
Date analysed	-			[NT]	4	14/12/2021	14/12/2021		[NT]	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	[NT]	4	<1	[NT]		[NT]	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	[NT]	4	<0.1	[NT]		[NT]	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	[NT]	4	<1	[NT]		[NT]	[NT]
Copper-Dissolved	µg/L	1	Metals-022	[NT]	4	<1	[NT]		[NT]	[NT]
Lead-Dissolved	µg/L	1	Metals-022	[NT]	4	<1	[NT]		[NT]	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	[NT]	4	<0.05	<0.05	0	[NT]	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	[NT]	4	5	[NT]		[NT]	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	[NT]	4	27	[NT]		[NT]	[NT]

QUALITY CONTROL: Miscellaneous Inorganics						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			10/12/2021	[NT]	[NT]	[NT]	[NT]	10/12/2021	[NT]
Date analysed	-			10/12/2021	[NT]	[NT]	[NT]	[NT]	10/12/2021	[NT]
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	100	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

pH
Samples were out of the recommended holding time for this analysis.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E34278PH Date Results Required: STANDARD Page: 1 of 1	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Todd Hore

Location:	Terrey Hills	Sample Preserved in Esky on Ice
Sampler:	MME	Tests Required

Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	Combo 2	Combo 3L	VOCs	pH / EC	8 Metals	PAHs	TRH/BTEX	BTEX	Hardness			
8/12/2021	1	MW101A	G1 X 2, V X 2, H	1	Water		X		X								
8/12/2021	2	MW102	G1 X 2, V X 2, H	0	Water		X		X								
8/12/2021	3	MW105	G1 X 2, V X 2, H	2	Water		X		X								
8/12/2021	4	WDup1	G1 X 2, V X 2, H	-	Duplicate		X										
8/12/2021	5	WDup2	G1 X 2, V X 2, H	-	Duplicate		X										
8/12/2021	6	TS-W	V	-	Trip Spike								X				
8/12/2021		TB-W	V X 2	-	Trip Blank								X				

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

Job No: 285130
Date Received: 10/12/21
Time Received: 1530
Received By:
Temp: Cool/Ambient 10°
Cooling: Ice/icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):
All analysis PQLs to ANZECC (2000) Detection Limits Please Please forward WDup2 to Melbourne

Sample Containers:
G1 - 250mL Amber Glass Bottle G2 - 1L Amber Glass Bottle
V - BTEX Vial H - HNO3 Wash PVC
PVC - HDPE Plastic Bottles

Relinquished By:	Date: 10/12/21	Time: 10am	Received By:	Date:
Hore		1530		10/12/21

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	JK Environments
Attention	Todd Hore

Sample Login Details

Your reference	E34278PH, Terrey Hills
Envirolab Reference	285130
Date Sample Received	10/12/2021
Date Instructions Received	10/12/2021
Date Results Expected to be Reported	17/12/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	6 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water - Low Level	HM in water - dissolved	pH	Electrical Conductivity
MW101A	✓	✓	✓	✓	✓	✓
MW102	✓	✓	✓	✓	✓	✓
MW105	✓	✓	✓	✓	✓	✓
WDup1	✓	✓	✓	✓		
TS-W	✓					
TB-W	✓					

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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ph 03 9763 2500 fax 03 9763 2633
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CERTIFICATE OF ANALYSIS 29239

Client Details

Client	JK Environments
Attention	Todd Hore
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E34278PH**
Number of Samples	1 Water
Date samples received	14/12/2021
Date completed instructions received	14/12/2021

Analysis Details

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

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

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

Report Details

Date results requested by	21/12/2021
Date of Issue	21/12/2021

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Results Approved By
Chris De Luca, Operations Manager

Authorised By

Pamela Adams, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference		29239-1
Your Reference	UNITS	WDUP2
Date Sampled		08/12/2021
Type of sample		Water
Date extracted	-	16/12/2021
Date analysed	-	16/12/2021
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 -C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Total +ve Xylenes	µg/L	<1
Total BTEX in water	µg/L	<1
Surrogate Dibromofluoromethane	%	105
Surrogate toluene-d8	%	98
Surrogate 4-BFB	%	94

TRH Water(C10-C40) NEPM		
Our Reference		29239-1
Your Reference	UNITS	WDUP2
Date Sampled		08/12/2021
Type of sample		Water
Date extracted	-	15/12/2021
Date analysed	-	15/12/2021
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
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	%	88

PAHs in Water - Low Level		
Our Reference		29239-1
Your Reference	UNITS	WDUP2
Date Sampled		08/12/2021
Type of sample		Water
Date extracted	-	15/12/2021
Date analysed	-	21/12/2021
Naphthalene	µg/L	<0.1
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j&k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Total +ve PAH's	µg/L	NIL (+)VE PAH
Benzo(a)pyrene TEQ	µg/L	<0.5
Surrogate p-Terphenyl-d_{14}	%	122

HM in water - dissolved		
Our Reference		29239-1
Your Reference	UNITS	WDUP2
Date Sampled		08/12/2021
Type of sample		Water
Date prepared	-	15/12/2021
Date analysed	-	15/12/2021
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	2
Lead-Dissolved	µg/L	<1
Nickel-Dissolved	µg/L	1
Zinc-Dissolved	µg/L	11
Mercury-Dissolved	µg/L	<0.05

Method ID	Methodology Summary
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-022	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater 2013.
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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			16/12/2021	[NT]	[NT]	[NT]	[NT]	16/12/2021	[NT]
Date analysed	-			16/12/2021	[NT]	[NT]	[NT]	[NT]	16/12/2021	[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]	88	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	102	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate Dibromofluoromethane	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	94	[NT]
Surrogate 4-BFB	%		Org-023	94	[NT]	[NT]	[NT]	[NT]	93	[NT]

QUALITY CONTROL: TRH Water(C10-C40) NEPM					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
Date analysed	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	71	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate o-Terphenyl	%		Org-020	81	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: PAHs in Water - Low Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			15/12/2021	[NT]	[NT]	[NT]	[NT]	15/12/2021	[NT]
Date analysed	-			21/12/2021	[NT]	[NT]	[NT]	[NT]	21/12/2021	[NT]
Naphthalene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Acenaphthylene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Fluorene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Anthracene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	114	[NT]
Pyrene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Benzo(b,j&k)fluoranthene	µg/L	0.2	Org-022	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d_{14}	%		Org-022	112	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			15/12/2021	1	15/12/2021	15/12/2021		15/12/2021	[NT]
Date analysed	-			15/12/2021	1	15/12/2021	15/12/2021		15/12/2021	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	1	<1	<1	0	108	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	1	<0.1	<0.1	0	109	[NT]
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	1	<1	<1	0	106	[NT]
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	1	2	2	0	108	[NT]
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	1	<1	<1	0	106	[NT]
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	1	1	1	0	108	[NT]
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	1	11	11	0	110	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	1	<0.05	[NT]		101	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph 03 9763 2500 fax 03 9763 2633
melbourne@envirolab.com.au
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SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Todd Hore

Sample Login Details

Your reference	E34278PH
Envirolab Reference	29239
Date Sample Received	14/12/2021
Date Instructions Received	14/12/2021
Date Results Expected to be Reported	21/12/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	17.4
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Pamela Adams	Chris De Luca
Phone: 03 9763 2500	**Phone: 03 9763 2500**
Fax: 03 9763 2633	**Fax: 03 9763 2633**
Email: padams@envirolab.com.au	**Email: cdeluca@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
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Sample ID	vTRH(C6-C10)/BTEXN in Water	TRH Water(C10-C40) NEPM	PAHs in Water - Low Level	HM in water - dissolved
WDUP2	✓	✓	✓	✓

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.

SAMPLE AND CHAIN OF CUSTODY FORM

TO: ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E34278PH Date Results Required: STANDARD Page: 1 of 1	**FROM:** JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Todd Hore

Location:	Terrey Hills	Sample Preserved in Esky on Ice
Sampler:	MME	Tests Required

Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	Combo 2	Combo 3L	VOCs	pH / EC	8 Metals	PAHs	TRH/BTEX	BTEX	Hardness			
8/12/2021	1	MW101A	G1 X 2, V X 2, H	1	Water		X		X								
8/12/2021	2	MW102	G1 X 2, V X 2, H	0	Water		X		X								
8/12/2021	3	MW105	G1 X 2, V X 2, H	2	Water		X		X								
8/12/2021	4	WDup1	G1 X 2, V X 2, H	-	Duplicate		X										
8/12/2021	7	WDup2	G1 X 2, V X 2, H	-	Duplicate		X										
8/12/2021	5	TS-W	V	-	Trip Spike								X				
8/12/2021	6	TB-W	V X 2	-	Trip Blank								X				

ENVIROLAB — Envirolab Services, 16 Research Drive, Croydon South VIC 3136, Ph: (03) 8763 2500
Job No: 29239
Date Received: 14/12/21
Time Received: 2:50pm
Received By: UD
Temp: Cool/Ambient 17.4°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

ENVIROLAB — Envirolab Services, 12 Ashley St, Chatswood NSW 2067, Ph: (02) 9910 6200
JOB NO: 285130
Date Received: 10/12/21
Time Received: 1530
Received By: UM
Temp: Cool/Ambient 10°
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):	Sample Containers:
All analysis PQLs to ANZECC (2000) Detection Limits Please Please forward WDup2 to Melbourne	G1 - 250mL Amber Glass Bottle G2 - 1L Amber Glass Bottle V - BTEX Vial H - HNO3 Wash PVC PVC - HDPE Plastic Bottles

Relinquished By:	Date: 10/12/21	Time: 10am	Received By:	Date:
THore		1530	CMcLean	10/12/21

E2S Syd K-Hore 13/12/21 1230

Appendix F: Report Explanatory Notes

QA/QC Definitions

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994)[16] methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (1991)[17]. The NEPM (2013) is consistent with these documents.

A. Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection Limit for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations: *"The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit*" (Keith, 1991).

B. Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD).

C. Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured (i.e. the proximity of an averaged result to the true value, where all random errors have been statistically removed). The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes. Accuracy is typically reported as percent recovery.

D. Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handing and analysis protocols and use of proper chain-of-custody and documentation procedures.

E. Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms;
- Sample receipt form;
- All sample results reported;
- All blank data reported;

[16] US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)

[17] Keith., H, (1991). *Environmental Sampling and Analysis, A Practical Guide*

- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

F. Comparability

Comparability is the evaluation of the similarity of conditions (e.g. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

G. Blanks

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{\text{(Spike Sample Result – Sample Result) x 100}}{\text{Concentration of Spike Added}}$$

I. Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

J. Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \times 100}{\{(D1 + D2)/2\}}$$

Appendix G: Data (QA/QC) Evaluation

Data (QA/QC) Evaluation

A. INTRODUCTION

This Data (QA/QC) Evaluation forms part of the validation process for the DQOs documented in Section 5.1 of this report. Checks were made to assess the data in terms of precision, accuracy, representativeness, comparability and completeness. These 'PARCC' parameters are referred to collectively as DQIs and are defined in the Report Explanatory Notes attached in the report appendices.

1. Field and Laboratory Considerations

The quality of the analytical data produced for this project has been considered in relation to the following:

- Sample collection, storage, transport and analysis;
- Laboratory PQLs;
- Field QA/QC results; and
- Laboratory QA/QC results.

2. Field QA/QC Samples and Analysis

A summary of the field QA/QC samples collected and analysed for this investigation is provided in the following table:

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
Intra-laboratory duplicate (soil)	SDup101 (primary sample BH105 0-0.1m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Intra-laboratory duplicate (soil)	SDup102 (primary sample BH107 0.1-0.2m)	As above	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Intra-laboratory duplicate (groundwater)	WDup1 (primary sample MW101A)	Approximately 33% of primary samples	Heavy metals, TRH/BTEX and PAHs
Inter-laboratory duplicate (soil)	SDup103 (primary sample BH110 0.09-0.4m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (soil)	SDup104 (primary sample BH122 0-0.4m)	Approximately 7% of primary samples	Heavy metals, TRH/BTEX, PAHs, OCPs, OPPs and PCBs
Inter-laboratory duplicate (groundwater)	WDup2 (primary sample MW102)	Approximately 33% of primary samples	Heavy metals, TRH/BTEX and PAHs
Trip spike (soil)	TS (30/11/21)	One for the investigation to demonstrate adequacy of preservation, storage and transport methods	BTEX
Trip spike (groundwater)	TS-W (8/12/21)	One for the investigation to demonstrate adequacy	BTEX

Sample Type	Sample Identification	Frequency (of Sample Type)	Analysis Performed
		of preservation, storage and transport methods	
Trip blank (soil)	TB-S1 (30/11/21) and TB-S2 (2/12/21)	Two for the investigation to demonstrate adequacy of storage and transport methods	BTEX
Trip blank (groundwater)	TB-W (8/12/21)	One for the investigation to demonstrate adequacy of storage and transport methods	BTEX
Rinsate (hand auger)	FR-HA1 (1/12/21) and FF-HA2 (2/12/21)	Two for the investigation to demonstrate adequacy of decontamination methods	Heavy metals, TRH/BTEX and PAHs

The results for the field QA/QC samples are detailed in the laboratory summary tables (Table S9 and Table G4) attached to the investigation report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report.

3. Data Assessment Criteria

JKE adopted the following criteria for assessing the field and laboratory QA/QC analytical results: =

Field Duplicates

Acceptable targets for precision of field duplicates in this report will be 30% or less, consistent with NEPM (2013). RPD failures will be considered qualitatively on a case-by-case basis taking into account factors such as the concentrations used to calculate the RPD (i.e. RPD exceedance where concentrations are close to the PQL are typically not as significant as those where concentrations are reported at least five or 10 times the PQL), sample type, collection methods and the specific analyte where the RPD exceedance was reported.

Field/Trip Blanks and Rinsates

Acceptable targets for field blank and rinsate samples in this report will be less than the PQL for organic analytes. Metals will be considered on a case-by-case basis with regards to typical background concentrations in soils.

Trip Spikes

Acceptable targets for trip spike samples in this report will be 70% to 130%.

Laboratory QA/QC

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the laboratory reports. These criteria were developed and implemented in accordance with the laboratory's NATA accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

A summary of the acceptable limits adopted by the primary laboratory (Envirolab) is provided below:

RPDs

- Results that are <5 times the PQL, any RPD is acceptable; and
- Results >5 times the PQL, RPDs between 0-50% are acceptable.

Laboratory Control Samples (LCS) and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spikes

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Method Blanks

- All results less than PQL.

B. DATA EVALUATION

1. Sample Collection, Storage, Transport and Analysis

Samples were collected by trained field staff in accordance. Field sampling procedures were designed to be consistent with relevant guidelines, including NEPM (2013) and other guidelines made under the CLM Act 1997.

Appropriate sample preservation, handling and storage procedures were adopted. Laboratory analysis was undertaken within specified holding times generally in accordance with Schedule B(3) of NEPM (2013) and the laboratory NATA accredited methodologies. Envirolab noted that the asbestos results were reported to be consistent with the recommendations in NEPM (2013), however this level of reporting is outside the scope of their NATA accreditation. In the absence of other available analytical methods for asbestos, this was found to be acceptable for the purpose of this investigation.

JKE note that the temperature on receipt of soil samples was reported to be up to 19°C. JKE understand that the temperature is measured at the laboratory using an infrared temperature probe by scanning the outside of the sample container (i.e. one sample jar/container at the time of registering the samples). This procedure is not considered to be robust as there is a potential for the outside of the jar to warm to ambient temperature, or at least to increase from that of the internal contents, relatively quickly. On this basis, JKE are of the opinion that the temperatures reported on the Sample Receipts are unlikely to be reliable or representative of the overall batch. This is further supported by the trip spike recovery results (discussed further below) which reported adequate recovery in the range of 95% to 97%.

Whilst it could be argued that 5% loss of volatiles may have led to these contaminants being under-reported (i.e. the lower end of the trip spike recovery was 95%), it is noted that all BTEX results and volatile TRHs (F1 and F2) were below the PQLs and even a nominal 5% increase of TRH/BTEX concentrations in these samples would not result in exceedance of the SAC.

Review of the project data also indicated that:

- COC documentation was adequately maintained;
- Sample receipt advice documentation was provided for all sample batches;
- All analytical results were reported; and
- Consistent units were used to report the analysis results.

2. Laboratory PQLs

Appropriate PQLs were adopted for the analysis and all PQLs were below the SAC, with the exception of the anthracene PQL for groundwater analysis which was 10 times greater than the ecological SAC. In light of the PAH concentrations reported for soil and groundwater, JKE are of the opinion that this is not significant, and it does not affect the quality of the dataset as a whole or the outcome of the investigation. It is acknowledged also that the PQLs for carbamates, synthetic pyrethroids and phenoxy acid herbicides were used as the SAC.

3. Field QA/QC Sample Results

Field Duplicates

The results indicated that field precision was acceptable. RPD non-conformances were reported for some analytes as discussed below:

- An elevated RPD was reported for nickel in SDup101/BH105 (0-0.1m);
- Elevated RPDs were reported for copper nickel and zinc in SDup102/BH107 (0.1-0.2m);
- Elevated RPDs were reported for several heavy metals and Phenanthrene in SDup103/BH110 (0.09-0.4m);
- Elevated RPDs were reported for several PAH compounds in SDup104/BH122 (0-0.4m); and
- Elevated RPDs were reported for copper nickel and zinc in both the groundwater duplicates WDup1/MW101A and WDup2/MW102.

Values outside the acceptable limits in soil samples have been attributed to sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices. As both the primary and duplicate sample results were less than the SAC, the exceedances are not considered to have had an adverse impact on the data set as a whole.

RPD exceedances in groundwater samples for copper and zinc were attributed to results close to the PQLs and low concentrations of the analytes in the samples. As both the primary and duplicate results exceeded the SAC, the exceedances are not considered to have had an adverse impact on the data set as a whole.

Field/Trip Blanks

During the investigation, two soil and one groundwater trip blank/s was placed in the esky during sampling and transported back to the laboratory. The results were all less than the PQLs, therefore cross contamination between samples that may have significance for data validity did not occur.

Rinsates

Both soil field rinsates contained detectable concentrations of TRH F1 and F3 and copper. The remaining results were below the PQL. The detectable concentration of light fraction TRH (F1) is most likely attributed to trihalomethanes associated with the use of tap water as the rinsate medium. These compounds are

breakdown products from the chlorination process and are common in potable water at the concentration reported (the Australian drinking water guideline for total trihalomethanes is 250µg/L).

The heavy fraction TRH (F3) is considered likely to be from the garden hose that was used to obtain the rinsate water. As elevated concentrations of TRH were not detected in the soil samples analysed for the DSI, these TRH detections are not considered to be indicative of cross contamination associated with the hand auger.

The copper detections are considered likely to be associated with potable water used to clean the hand auger. Considering the relatively low concentrations of copper in the soil samples analysed for the DSI, there is considered to be a low potential for cross contamination to have occurred to an extent that may have significance for data validity.

Trip Spikes
The results ranged from 95% to 120% and indicated that field preservation methods were appropriate.

4. Laboratory QA/QC

The analytical methods implemented by the laboratory were performed in accordance with their NATA accreditation and were consistent with Schedule B(3) of NEPM (2013). The frequency of data reported for the laboratory QA/QC (i.e. duplicates, spikes, blanks, LCS) was considered to be acceptable for the purpose of this investigation.

A review of the laboratory QA/QC data identified the following minor non-conformances:

- Percent recovery for TRH in the matrix spike was not possible to report as the high concentration of analytes in sample BH102 (0-0.2m) caused interference;
- The laboratory RPD acceptance criteria was exceeded for BH124 (0-0.3m) for chromium, copper and lead. Therefore a triplicate result was issued as laboratory sample number 284547-75;
- The laboratory RPD acceptance criteria was exceeded for TP129 (0-0.2m) for copper and nickel. Therefore a triplicate result was issued as laboratory sample number 284547-76;
- Percent recovery was not possible to report for some heavy metals due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS; and
- The RPD for duplicate result for PAHs was accepted due to the non homogenous nature of sample/s TP129 (0-0.2m).

The laboratory QA/QC was considered to be acceptable. JKE assessed the laboratory duplicate and triplicate results against the SAC, therefore the infrequent RPD exceedances that were reported were not considered to alter the conclusions of the DSI.

C. DATA QUALITY SUMMARY

JKE are of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

Non-conformances were reported for some field QA/QC samples and laboratory QA/QC analysis. These non-conformances were considered to be sporadic and minor, and were not considered to be indicative of

systematic sampling or analytical errors. On this basis, these non-conformances are not considered to materially impact the report findings.

There was only one groundwater and one HGG monitoring event undertaken for the investigation. On this basis there is some uncertainty around the representativeness of the groundwater and HGG data. This has been considered in the discussion and DSI conclusions.

Appendix H: Field Work Documents

JKEnvironments

WATER QUALITY METER CALIBRATION FORM

Client:	Syesun Pty Ltd - Flower Power Terrey Hills		
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		
DISSOLVED OXYGEN			
Make:	Model:		
Date of calibration: 02/12/21	Name of Calibrator: AD		
Span value: 70% to 130%			
Measured value: 100%			
Measured reading Acceptable (Yes/No):			
pH			
Make:	Model:		
Date of calibration: 02/12/21	Name of Calibrator: AD		
Buffer 1: Theoretical pH = 7.01± 0.01	Expiry date: 08/22	Lot No: 367754	
Buffer 2: Theoretical pH = 4.01± 0.01	Expiry date: 10/22	Lot No: 371300	
Measured reading of Buffer 1: 7.03			
Measured reading of Buffer 2: 4.01			
Slope:	Measured reading Acceptable (Yes/No):		
EC			
Make:	Model:		
Date: 02/12/21	Name of Calibrator: AD	Temperature: 26.0 °C	
Calibration solution: Conductivity Standard	Expiry date: 11/22	Lot No: 373623	
Theoretical conductivity at temperature (see solution container): 1440 µS/cm			
Measured conductivity: 2809 µS/cm	Measured reading Acceptable (Yes/No):		
REDOX			
Make:	Model:		
Date of calibration: 02/12/21	Name of Calibrator: AD		
Calibration solution: ORP Test Solution	Expiry date: 04/26	Lot No: 6347	
Theoretical redox value: 240mV			
Measured redox reading: 236.1 mV	Measured reading Acceptable (Yes/No):		

JKEnvironments

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	**Job No.:**	E34278PH
Project:	Proposed Redevelopment of Garden Centre	**Well No.:**	MW101A
Location:	277 Mona Vale Road, TERREY HILLS, NSW	**Depth (m):**	6.0m

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐	Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	Development pump	**SWL – Before (m):**	2.87m
Date:	02/12/21	**Time – Before:**	8:15am
Undertaken By:	AD	**SWL – After (m):**	-
Total Vol. Removed:	10L	**Time – After:**	
PID Reading (ppm):	0.8		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
1	20.9	8.1	427.5	6.54	150.6
2	20.1	5.5	517	6.99	141.8
3	20.1	4.0	516	5.70	135.1
4	20.2	3.0	513	5.60	132.3
5	20.3	2.1 1.6	449.1	5.43	130.3
6	20.1	1.6	450.1	5.37	129.7
7	20.0	1.9	457.3	5.30	129.1
8	19.9	1.6	454.2	5.22	128.2
9	19.8	0.9	452.3	5.13	127.4
10	19.8	0.8	469.3	5.00	124.3
		PUMPED DRY			

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

YSI Used: 5 High silt load, low recharge

Tested By:	AD
Date Tested:	02/12/21
Checked By:	TH
Date:	19/1/21

Remarks:
- Steady state conditions
- Difference in the pH less than 0.2 units, difference in the conductiveity less than 10% and SWL stable/not in drawdown
- Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry

JKEnvironments

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Job No.:	E34278PH
Project:	Proposed Redevelopment of Garden Centre	Well No.:	MW102
Location:	277 Mona Vale Road, TERREY HILLS, NSW	Depth (m):	6.0m

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐		Other (describe) ☐	

WELL DEVELOPMENT DETAILS

Method:	Development pump	SWL – Before (m):	1.12m
Date:	02/12/21	Time – Before:	9:45am
Undertaken By:	AD	SWL – After (m):	2.78m
Total Vol. Removed:	34L	Time – After:	10:30am
PID Reading (ppm):	0.7		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
2	20.0	9.2	511	5.11	34.7
4	17.7	3.1	537	5.00	32.0
6	17.9	1.8	483.3	5.01	31.9
8	18.1	1.9	460.3	5.02	31.9
10	18.3	1.9	459.2	5.01	32.6
12	18.6	2.0	462.7	WL ↑ 4.93	32.3
14	18.0	6.0	417.3	4.76	36.9
16	17.8	2.4	406.2	4.71	37.2
18	17.7	2.4	444.1	4.61	38.0
20	17.7	1.5	431.0	4.62	37.9
22	17.9	2.7	466.7	4.42	46.3
24	17.9	4.5	486.0	4.32	45.3
26	17.9	5.4	445.8	4.40	46.0
28	17.8	7.0	442.4	4.32	44.7
30	17.8	7.2	432.0	4.35	40.6
32	17.7	7.2	422.0	4.31	39.5
34	17.7	7.0	418.1	4.37	38.5

Comments: Odours (YES / (NO)), NAPL/PSH (YES / (NO)), Sheen (YES / (NO)), Steady State Achieved ((YES) / NO)

YSI Used: 5

High silt load, high recharge

Tested By:	AD
Date Tested:	02/12/21
Checked By:	TH
Date:	19/1/21

Remarks:

- Steady state conditions
- Difference in the pH less than 0.2 units, difference in the conductiveity less than 10% and SWL stable/not in drawdown
- Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry

JKEnvironments

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	**Job No.:**	E34278PH
Project:	Proposed Redevelopment of Garden Centre	**Well No.:**	MW105
Location:	277 Mona Vale Road, TERREY HILLS, NSW	**Depth (m):**	6.0

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐	Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	Development pump	**SWL – Before (m):**	0.46
Date:	02/12/21	**Time – Before:**	9:00am
Undertaken By:	AD	**SWL – After (m):**	0.49
Total Vol. Removed:	32L	**Time – After:**	10:50am
PID Reading (ppm):	0.6		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
2	23.8	9.5	439.1	6.61	59.3
4	17.5	7.3	680	6.43	56.8
6	17.5	7.9	399.0	6.36	55.8
8	17.4	5.0	661	6.85	56.3
10	17.6	4.3	630	6.34	50.7
12	17.8	4.1	627	6.30	57.30
14	18.1	4.0	623	6.27	57.9
16	18.2	3.9	481.8	6.28	57.3
18	17.7	3.4	384.4	6.01	58.2
20	17.4	3.7	361.8	5.71	58.7
22	17.5	4.2	275.2	4.76	68.4
24	17.3	5.4	280.4	4.58	08.8
26	17.7	6.1	269.1	4.33	74.6
28	17.4	6.2	284.1	4.12	72.4
30	17.6	3.2	286.0	4.19	70.9
32	17.3	5.7	276.3	4.21	71.3

Comments: Odours (YES / (NO)) NAPL/PSH (YES / (NO)) Sheen (YES / (NO)) Steady State Achieved ((YES) / NO)

YSI Used: 5 High silt load, high recharge

Tested By:	AD
Date Tested:	02/12/21
Checked By:	TH
Date:	19/1/21

Remarks:

- Steady state conditions
- Difference in the pH less than 0.2 units, difference in the conductiveity less than 10% and SWL stable/not in drawdown
- Minimum 3 monitoring well volumes purged, unless well purged until it is effectively dry

JKEnvironments

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	**Job No.:**	E34278PH
Project:	Proposed Redevelopment of Garden Centre	**Well No.:**	MW101A
Location:	277 Mona Vale Road, TERREY HILLS, NSW	**Depth (m):**	6.0.

WELL FINISH

X	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	low flow sampling	**SWL – Before:**	2.76.
Date:	8/12/21	**Time – Before:**	11:06.
Undertaken By:	MME.	**Total Vol Removed:**	
Pump Program No:	—	**PID (ppm):**	1

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
11:08	2.80	0.2		20.6	9.4	13.2	6.84	33.5
11:12	2.80	0.3		21.6	9.1	16.7	5.69	52.1
11:16.	2.80	0.4		21.5	3.7	429.7	5.31	34.5.
11:20.	2.80	0.5		21.4	2.1	812	5.27	25.6.
11:24	2.80	0.6		21.6	1.8	822	5.32	21.6.
11:28	2.80	0.7		21.6	1.4	816	5.34	19.8.
11:32	2.80	0.8		21.6	1.3	805	5.33	18.9
			start sampling					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

Sampling Containers Used: 2 x glass amber, 2 x BTEX vials, 1 x HNO3 plastic, ~~x H2SO4 plastic~~, ~~x unpreserved plastic~~

YSI used: 5 WDup1 collected here

Tested By: ~~Todd Hore~~ MME	**Remarks:**
Date Tested: 8/12/21.	- Steady state conditions - difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Checked By: TH	
Date: 19/1/21	

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Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Job No.:	E34278PH
Project:	Proposed Redevelopment of Garden Centre	Well No.:	MW102
Location:	277 Mona Vale Road, TERREY HILLS, NSW	Depth (m):	6.0

WELL FINISH

X	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	Lowflow sampling	SWL – Before:	0.53
Date:	8/12/21	Time – Before:	12:32
Undertaken By:	MME	Total Vol Removed:	
Pump Program No:	—	PID (ppm):	n.

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
12:34	0.60	0.2		18.8	10.5	5.9	5.26	41.6
12:36	0.60	0.3		18.6	6.3	14.7	4.75	-34.2
12:38	0.60	0.4		18.6	1.6	466.6	4.38	25.2
12:42	0.60	0.5		18.6	1.5	465.7	4.35	25.5
12:46	0.59	0.7		18.5	1.3	463.4	4.22	24.6
12:50	0.59	0.9		18.5	1.2	462.4	4.17	22.3
12:54	0.59	1.1		18.5	1.1	462.1	4.16	20.6
12:58	0.59	1.3		18.5	1.1	462.2	4.15	20.4

Comments: Odours (YES / NO), NAPL/PSH (YES / NO) Sheen (YES / NO), Steady State Achieved (YES / NO)

Sampling Containers Used: 2x glass amber, 2x BTEX vials, 1 x HNO3 plastic, ~~x H2SO4 plastic,~~ x unpreserved plastic

YSI used: 5 WQD2 collected here.

Tested By: ~~Todd Hore~~ MME	**Remarks:**
Date Tested: 8/12/21	- Steady state conditions - difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Checked By: TH	
Date: 19/1/21	

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Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Job No.:	E34278PH
Project:	Proposed Redevelopment of Garden Centre	Well No.:	MW105
Location:	277 Mona Vale Road, TERREY HILLS, NSW	Depth (m):	6.0

WELL FINISH

X	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	Low flow sampling	SWL – Before:	1.23
Date:	8/12/21	Time – Before:	1:51
Undertaken By:	MME	Total Vol Removed:	0.7
Pump Program No:	—	PID (ppm):	2.

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
1:54	1.28	0.2		18.3	10.6	4.1	4.20	302
1:56	1.28	0.3		18.4	5.8	415.8	4.09	13.1
1:58	1.29	0.4		18.3	2.9	419.0	4.07	16.9
2:01	1.29	0.5		18.4	2.4	798	4.06	16.2
2:04	1.29	0.6		18.4	1.9	799	4.09	14.7
2:07	1.29	0.7		18.3	1.8		4.09	14.5
			Start sampling					

Comments: Odours (YES / (NO)) NAPL/PSH (YES / (NO)) Sheen (YES / (NO)) Steady State Achieved (YES) / NO)

Sampling Containers Used: 2 x glass amber, 2 x BTEX vials, 1 x HNO3 plastic, ~~x H2SO4 plastic~~, ~~x unpreserved plastic~~

YSI used: 5

Tested By: ~~Todd Hore~~ MME	**Remarks:**
Date Tested: 8/12/21.	- Steady state conditions
Checked By: TH	- difference in the pH less than 0.2 units, difference in conductivity less than 10% 10% and SWL stable/not in drawdown
Date: 19/1/21	

JKEnvironments

WATER QUALITY METER CALIBRATION FORM

Client:	Syesun Pty Ltd - Flower Power Terrey Hills		
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		
DISSOLVED OXYGEN			
Make: YSI	Model: Professional Plus.		
Date of calibration: 8/12/21	Name of Calibrator:		
Span value: 70% to 130%			
Measured value: 108%			
Measured reading Acceptable (Yes/No):			
pH			
Make: YSI	Model: Professional Plus		
Date of calibration: 8/12/21	Name of Calibrator: MME.		
Buffer 1: Theoretical pH = 7.01± 0.01	Expiry date: 5/22	Lot No: 372831	
Buffer 2: Theoretical pH = 4.01± 0.01	Expiry date: 4/22.	Lot No: 371300	
Measured reading of Buffer 1: 7.00.			
Measured reading of Buffer 2: 4.00.			
Slope:	Measured reading Acceptable (Yes/No):		
EC			
Make: YSI	Model: Professional Plus		
Date: 8/12/21	Name of Calibrator: MME.	Temperature: 21 °C	
Calibration solution: Cond. 1413 µS/cm Standard	Expiry date: 5/22.	Lot No: 373623.	
Theoretical conductivity at temperature (see solution container): 1305 µS/cm			
Measured conductivity: 1308 µS/cm	Measured reading Acceptable (Yes/No):		
REDOX			
Make: YSI	Model: Professional Plus.		
Date of calibration: 8/12/21.	Name of Calibrator: MME		
Calibration solution: ORP Test Solution	Expiry date: 7/26.	Lot No: 6658.	
Theoretical redox value: 240mV			
Measured redox reading: 240.2 mV	Measured reading Acceptable (Yes/No):		

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	recently rainy, overcast
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH101	1000	0.2	0.0	0.0	20.8	0	0
		1.0	0.0	0.5	20.9	0	0
		2.0	0.0	0.0	20.8	0	0
		3.0	~~0.0~~ 2.4	~~8.0~~ 11.9	~~8.0~~ 4.3	0	~~43~~ 27
		5.0	1.8	6.0	12.2	0	20
			1.3	4.6	14.0	0	25

Notes:

Recorded by:	~~TH~~ AD
Date:	30/11/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Cloudy, recent rain
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH101A, 3:38pm	996	0.5	0.0	0.3	20.9	0	0
		1.5	0.0	0.3	20.9	0	0
		3.0	0.0	0.2	21.0	0	0
BH101A, 4:03pm	995	6.0	0.0	0.3	20.9	0	0

Notes:	Recorded by:	AD
	Date:	30/11/21
	Checked by:	TH
	Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Cloudy, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH102 9:45 am	997	0.2	0.0	0.1	20.7	0	10
		1.0	0.0	0.0	21.0	0	0
		2.0	0.0	0.0	21.0	0	0
		3.5	0.0	3.1	10.2	0	41
10:30 am	996	6.0	0.0	5.7	17.7	0	45

Notes:

Recorded by:	AD
Date:	30/11/21
Checked by:	TH
Date:	20/1/22

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HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Cloudy, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH103, 10:45am	996	0.1	0.0	0.1	21.0	0	14
			0.0	0.0	21.0	0	10
							5

Notes:

Recorded by:	TH AD
Date:	30/11/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Cloudy, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH104, 11:55am	997	0.2	0.0	0.2	20.9	0	10
		1.0	0.0	0.9	19.9	0	0

Notes:

Recorded by:	AD
Date:	30/11/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	cloudy, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH105, 12:40pm	997		0.0	0.1	21.0	0	0
	1000		0.0	1.4	20.0	0	0
1:35pm	995		0.0	0.8	20.1	0	10.75

Notes:

Recorded by:	AO
Date:	30/11/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Cloudy, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH107, 2:40pm	995	0.2	0.0	0.3	20.7	0	10
		1.0	0.0	0.3	20.8	0	0
BH107, 2:55pm	995		0.0	0.3	20.8	0	0
							5

Notes:		
	Recorded by:	AD
	Date:	30/11/21
	Checked by:	TH
	Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Cloudy, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH108, 3:20pm	995	0.2	0.0	0.4	20.9	0	0
BH108, 3:28pm	995	1.0	0.0	0.3	20.8	0	0
							5

Notes:		
	Recorded by:	AD
	Date:	30/11/21
	Checked by:	TH
	Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Weather Conditions:	Sunny, recently rainy
Project:	Proposed Redevelopment of Garden Centre		
Location:	277 Mona Vale Road, TERREY HILLS, NSW		
Job Number:	E34278PH		

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH109 7:53	997	0.2	0.0	0.0	20.9	0	0
BH109 8:10	996	0.4	0.0	0.0	20.9	0	0
BH110 8:19	997	0.09	0.0	0.0	20.8	0	0
BH110 8:34	997	1.8	3.9	1.3	19.9	0	0
BH111 8:59	996	0.05	0.0	0.0	21.0	0	0
BH111 9:12	995	0.6	0.0	0.1	21.0	0	0
BH112 9:27	996	0.08	0.0	0.0	20.9	0	0
BH112 9:45	998	0.6	0.0	0.0	21.1	0	0
BH113 9:54	996	0.18	0.0	0.1	21.2	0	0
BH113 10:10	997	0.5	0.0	0.0	20.9	0	0
BH114 10:35	997	0.23	0.0	0.1	21.3	0	0
BH114 10:46	997	0.72	0.0	0.0	21.3	0	0
BH115 11:26	996	0.16	0.0	0.4	21.6	0	0
BH115 11:34	995	0.4	0.0	0.0	21.1	0	0
BH116 11:46	993	0.21	0.0	0.1	21.7	0	0
BH116 12:08	993	0.55	0.0	0.0	21.6	0	0
BH117 12:20	992	0.12	0.0	0.0	21.6	0	0
BH117 12:36	993	0.7	0.0	0.0	21.7	0	0
BH118 12:58	996	0.1	0.0	0.1	21.0	0	0
BH118 1:15	996	0.7	0.0	0.0	21.0	0	0
BH119 1:28	991	0.1	0.0	0.0	21.0	0	10
BH119 1:34	991	0.8	0.0	0.1	21.0	0	0

Notes: —

Recorded by:	MME
Date:	1/12/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS DRILLING FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills
Project:	Proposed Redevelopment of Garden Centre
Location:	277 Mona Vale Road, TERREY HILLS, NSW
Job Number:	E34278PH
Weather Conditions:	Sunny, recently sunny

Borehole Number, Start and Finish Time	Start Atmospheric Pressure and Completion Atmospheric Pressure (mb)	Drilling Depth (m Below Ground Level)	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	H_2S (ppm)	CO (ppm)
BH120 8:05.	998	0.1	0.0	0.1	20.7	0	0
BH120 8:25	999	0.6	0.0	0.1	20.9	0	0
BH121. 8:40	1000	0.1	0.0	0.0	21.0	0	0
BH122 9:15	998	0	0.0	0.0	21.1	0	0
BH122 9:35	995	0.5	0.0	0.0	21.1	0	0
BH123. 9:41.	995.	0.1	0.0	0.1	21.1	0	0
BH123 9:55	996.	0.5	0.0	0.0	21.1	0	0
BH124. 9:58	996.	0	0.0	0.0	21.1	0	0
BH124. 10:09	996.	0.3	0.0	0.0	21.2	0	0
BH125 10:20	996.	0	0.0	0.1	21.1	0	0
BH125 10:28	995	0.4	0.0	0.5	20.9	0	0
TP126. 10:35	997.	0.1	0.0	0.0	21.1	0	0
TP126. 11:14	997	0.7	0.0	0.1	21.0	0	0
TP127. 11:28	996.	0.1	0.0	0.1	20.9	0	0
TP127 11:43.	996.	0.7	0.0	0.2	21.0	0	0
BH128 12:05.	997.	0.1	0.0	0.2	21.3	0	0
BH128 12:11.	997.	0.45	0.0	0.1	21.3	0	0
TP129. 12:20.	989	0.1	0.0	0.4	20.9	0	0
TP129 12:38	990	0.5	0.0	0.4	20.9	0	0
BH130. 12:53	995	0.1	0.0	0.0	21.5	0	0
BH130.	994	0.5	0.0	0.1	21.5	0	0

Notes:

Recorded by:	MME
Date:	2/12/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

HAZARDOUS GROUND GAS MONITORING WELL FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Monitoring Well No:	MW101
Project:	Proposed Redevelopment of Garden Centre	Weather Conditions:	overcast, recently rainy
Location:	277 Mona Vale Road, TERREY HILLS, NSW	SWL (m)^:	2.72
Job Number:	E34278PH	PID (ppm):	17.
		Start Time and Atmospheric Pressure (mbar):	10:13 am 995
		Completion Time and Atmopsheric Pressure (mbar):	10:29 am 994.

Time (min)#	Differential Pressure (Pa)	Flow (L/H)
0.5	-6	-1.0
1	-6	-1.0
1.5	-6	-1.0
2	-5	-0.9
2.5	-6	-1.0
3	-6	-1.0
3.5	-6	-1.0
4	-7	-1.2
4.5	-6	-1.1
5	-6	-1.0
Initial	-6	-1.0
Peak	-7	-1.2

Time (min)#	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	CH_4 (%LEL)	H_2S (ppm)	CO (ppm)	Hexane (%)	PID Cf (ppm)
0.5	0.0	0.4	20.3	0.0	0	0	0.036	1.0
1	0.0	4.3	15.2	1.5	0	0	0.043	1.0
1.5	0.1	4.0	14.4	2.0	0	0	0.041	1.0
2	0.0	8.5	9.2	9.6	0	0	0.050	1.2
2.5	0.8	12.5	3.2	19.8	0	0	0.057	1.4
3	0.9	13.2	2.3	23.1	0	0	0.059	1.5
3.5	1.0	13.7	1.8	24.7	0	0	0.055	1.3
4	0.7	9.5	7.8	18.3	0	0	0.056	1.4
4.5	1.0	11.6	4.9	24.3	0	0	0.062	1.5
5	1.2	13.6	2.3	28.4	0	0	0.068	1.6
5.5	1.2	14.1	1.6	29.0	0	0	0.069	1.6
6	1.0	3.8	14.9	13.2	0	0	0.057	1.5
6.5	1.1	13.7	2.2	27.6	0	0	0.063	1.5
7	1.0	12.8	3.5	26.9	0	0	0.067	1.6
7.5	1.2	14.1	1.5	29.8	0	0	0.069	1.6
8	1.3	14.2	1.4	29.8	0	0	0.070	1.6
8.5	1.3	12.8	3.8	27.9	0	0	0.066	1.6
9	1.2	13.4	2.6	29.8	0	0	0.070	1.6
9.5	1.3	11.0	5.5	27.9	0	0	0.068	1.6
10	1.3	14.1	1.7	31.4	0	0	0.072	1.6
Initial	0.0	0.4	20.3	0.0	0	0	0.036	1.0
Peak	1.3	14.2	20.3	31.4	0	0	0.072	1.6

Notes:

^ Standing Water Level (SWL) in meters below ground level. Recorded on completion of monitoring.

HGG measurements recorded at least 5 minuites following flow measurements.

Recorded by:	~~TH~~ MMF
Date:	8/12/21
Checked by:	TH
Date:	20/1/22

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HAZARDOUS GROUND GAS MONITORING WELL FIELD SHEET

Client:	Syesun Pty Ltd - Flower Power Terrey Hills	Monitoring Well No:	MW106
Project:	Proposed Redevelopment of Garden Centre	Weather Conditions:	overcast, recently rainy
Location:	277 Mona Vale Road, TERREY HILLS, NSW	SWL (m)^:	1.70
Job Number:	E34278PH	PID (ppm):	0
		Start Time and Atmospheric Pressure (mbar):	2:45 pm 902
		Completion Time and Atmopsheric Pressure (mbar):	2:55 pm 943

Time (min)#	Differential Pressure (Pa)	Flow (L/H)
0.5	-6	-1.0
1	-6	-1.1
1.5	-6	-1.0
2	-6	-1.1
2.5	-6	-1.1
3	-6	-1.1
3.5	-7	-1.2
4	-7	-1.2
4.5	-6	-1.0
5	-6	-1.0
Initial	-6	-1.0
Peak	-7	-1.2

Time (min)#	CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	CH_4 (%LEL)	H_2S (ppm)	CO (ppm)	Hexane (%)	PID Cf (ppm)
0.5	0.0	6.6	7.7	0.0	0	0	0.032	1.0
1	0.0	6.8	7.3	0.0	0	0	0.032	1.0
1.5	0.0	5.7	9.3	0.0	0	0	0.032	1.0
2	0.0	4.2	12.1	0.0	0	0	0.032	1.0
2.5	0.0	3.3	13.8	0.0	0	0	0.032	1.0
3	0.0	2.4	15.2	0.0	0	0	0.032	1.0
3.5	0.0	1.9	16.7	0.0	0	0	0.033	1.0
4	0.0	1.6	17.4	0.0	0	0	0.032	1.0
4.5	0.0	1.3	17.9	0.0	0	0	0.033	1.0
5	0.0	0.9	16.7	0.0	0	0	0.034	1.0
Initial	0.0	6.6	7.7	0.0	0	0	0.032	1.0
Peak	0.0	6.8	17.9	0.0	0	0	0.033	1.0

Notes:

^ Standing Water Level (SWL) in meters below ground level. Recorded on completion of monitoring.

HGG measurements recorded at least 5 minuites following flow measurements.

Recorded by:	~~TH~~ MME
Date:	8/12/21
Checked by:	TH
Date:	20/1/22

JKEnvironments

PID FIELD CALIBRATION FORM

Client: Syesun Pty Ltd - Flower Power Terrey Hills			
Project: Proposed Re Development of Garden Centre			
Location: 277 Mona Vale Road, Terrey Hills, NSW			
Job Number: E34278PH			
PID			
Make: LEL	Model:	Unit:	Date of last factory calibration: 11/8/21
Date of calibration: 2/12/21		Name of Calibrator: MME	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 100 ppm		Error in measured reading: ± 0 ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make: LEL	Model:	Unit:	Date of last factory calibration: 11/8/21
Date of calibration: 8/12/21		Name of Calibrator: MME	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 101 ppm		Error in measured reading: ± 1 ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			
PID			
Make:	Model:	Unit:	Date of last factory calibration:
Date of calibration:		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			

Appendix I: Guidelines and Reference Documents

Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). Acid Sulfate Soils Manual

Australian and New Zealand Environment Conservation Council (ANZECC), (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality

Canadian Council of Ministers of the Environment, (1999). Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)

CRC Care, (2011). Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document

Contaminated Land Management Act 1997 (NSW)

Department of Land and Water Conservation, (1997). 1:25,000 Acid Sulfate Soil Risk Map Series

Managing Land Contamination, Planning Guidelines SEPP55 – Remediation of Land (1998)

National Health and Medical Research Council (NHMRC), (2021). National Water Quality Management Strategy, Australian Drinking Water Guidelines 2011

NSW Department of Environment and Conservation, (2007). Guidelines for the Assessment and Management of Groundwater Contamination

NSW EPA, (1995). Contaminated Sites Sampling Design Guidelines

NSW EPA, (2014). Waste Classification Guidelines - Part 1: Classifying Waste

NSW EPA, (2015). Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997

NSW EPA, (2017). Guidelines for the NSW Site Auditor Scheme, 3rd Edition

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

National Environment Protection Council (NEPC), (2013). National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)

Olszowy, H., Torr, P., and Imray, P., (1995). Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

Protection of the Environment Operations Act 1997 (NSW)

State Environmental Planning Policy (Resilience and Hazards) 2021 (NSW)

World Health Organisation (WHO), (2008). Petroleum Products in Drinking-water, Background document for the development of WHO Guidelines for Drinking Water Quality

Western Australia Department of Health, (2021). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia