REPORT TO

AV JENNINGS SPV NO25 PTY LTD

ON

DETAILED SITE INVESTIGATION (DSI)

FOR

PROPOSED MIXED USE DEVELOPMENT

AT

1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Date: 19 July 2024
Ref: E36120PWrpt3

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b) The limitations defined in the Client's brief to JKE; and
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Executive Summary

AV Jennings SPV No25 Pty Ltd ('the client') commissioned JK Environments (JKE) to undertake a Detailed Site Investigation (DSI) for the proposed mixed use development at 1 Kellicar Road, Campbelltown, NSW ('the site'). The purpose of the investigation is to make an assessment of site contamination and establish whether remediation of the site is required. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 attached to the appendices.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed mixed-use development, with regards to Chapter 4 (Clause 4.6) of State Environmental Planning Policy (Resilience and Hazards) 2021[1] (formerly known as SEPP55).

JKE has prepared the following reports for the proposed development at the site:

- Preliminary Site Investigation (PSI) (Ref: E36120PWrpt, dated 25 August 2023); and
- Preliminary Groundwater Quality Screening (Ref: E36120PWrpt2, dated 13 December 2023).

A summary of the previous JKE reports is included in Section 2.

The PSI and preliminary groundwater quality screening were undertaken in conjunction with a geotechnical investigation by our geotechnical division, JK Geotechnics (JKG). The geotechnical report (36120YCrpt, dated 1 September 2023) should be read in conjunction with this DSI report.

Based on the latest supplied architectural plans prepared by DKO Architecture dated 3 May 2024, we understand that the proposed development includes the demolition of the current warehouse and associated structures, followed by the construction of eight, multi-storey, mixed-use buildings (buildings A to H). The proposed buildings will consist of residential apartments, with selected ground floor commercial land use, over two and three basement levels.

Landscaping is proposed within the central and northern portions of the open areas of the site. Deep soil areas are located along the western and southern site boundaries, across the central portion of the site and along parts of the eastern site boundary.

The primary aims of the investigation were to make an assessment of the soil and groundwater contamination conditions at the site in order to assess risks in relation to contamination, and establish whether remediation is required. The objectives were to:

- Assess the soil contamination conditions at the site;
- Make an assessment of the groundwater contamination conditions via sampling from three onsite monitoring wells previously installed during the PSI;
- Review and update (if required) the conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Comment on site suitability for the proposed development, with regards to contamination; and
- Facilitate the preparation of a Remediation Action Plan (RAP), where required.

The scope of work included the following:

- Review of the PSI report;
- 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.

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

The DSI included a review of the PSI, a site walkover inspection, soil sampling from 39 boreholes (BH101 to BH139 inclusive) and groundwater sampling from three existing groundwater monitoring wells (MW2, MW4 and MW6).

The DSI boreholes encountered fill materials to depths of approximately 0.16mGL to 2.2m below ground level (BGL) (through we note fill was generally identified to depths of less than 0.5mBGL). The deepest areas of fill (up to 2.2mBGL) were identified along the filled retaining wall section located within the north-eastern portion of the site. The fill contained inclusions of igneous and ironstone gravel, siltstone gravels and cobbles, sand, asphalt fragments, building rubble (concrete and tile fragments), plastic fragments, clay nodules, bark, slag, roots and root fibres.

A selection of soil and groundwater samples were analysed for the Contaminants of Potential Concern (CoPC) identified in the CSM. The following exceedances were reported for each media:

- Fill samples identified Total Recoverable Hydrocarbons (TRH) F3 above the ecological-based SAC at two sampling locations; and
- Groundwater samples identified the insecticide imidacloprid marginally above the ecological-based SAC in one location.

Risks associated with soil and groundwater were assessed to be low in the context of the proposed land use and a trigger for remediation was not identified. On this basis, and subject to the implementation of the following recommendations, we are of the opinion that the site is suitable for the proposed development as outlined in Section 1.1 of this report:

- A robust Unexpected Finds Protocol (UFP) must be developed and implemented during the proposed development. The UFP must include specific procedures for managing unexpected contamination-related finds such as asbestos etc;
- The localised presence of insecticide imidacloprid in the groundwater in the northern end of the site must be managed appropriately during the construction process, via a Dewatering Management Plan (DMP). Groundwater must not be discharged from the site without prior approval from the authorities/regulators, and not unless contaminant concentrations are demonstrated to be acceptable prior discharge; and
- A waste classification assessment is required prior to the off-site disposal of any waste. The waste classification process must include provisions for bulk (10L) field quantification screening for asbestos as part of the sampling plan.

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

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Attachments

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**
Before You Dig Australia	**BYDA**
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**
Combined Risk Value	**CRV**
Contaminant(s) of Potential Concern	**CoPC**
Chain of Custody	**COC**
Conceptual Site Model	**CSM**
Development Application	**DA**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Detailed Site Investigation	**DSI**
Ecological Investigation Level	**EIL**
Ecological Screening Level	**ESL**
Environmental Management Plan	**EMP**
Environment Protection Authority	**EPA**
Fibre Cement Fragment(s)	**FCF**
Health Investigation Level	**HIL**
Health Screening Level	**HSL**
Health Screening Level-Site Specific Assessment	**HSL-SSA**
JK Environments	**JKE**
JK Geotechnics	**JKG**
Lab Control Spike	**LCS**
Light Non-Aqueous Phase Liquid	**LNAPL**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Polychlorinated Biphenyls	**PCB**
Photo-ionisation Detector	**PID**
Practical Quantitation Limit	**PQL**
Quality Assurance	**QA**
Quality Control	**QC**
Relative Percentage Difference	**RPD**
Reduced/Relative Level	**RL**
Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**
State Environmental Planning Policy	**SEPP**
Site Specific Assessment	**SSA**
Source, Pathway, Receptor	**SPR**
Standing Water Level	**SWL**

Trip Blank	**TB**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Upper Confidence Limit	**UCL**
United States Environmental Protection Agency	**USEPA**
Volatile Organic Compounds	**VOC**
World Health Organisation	**WHO**

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

AV Jennings SPV No25 Pty Ltd ('the client') commissioned JK Environments (JKE) to undertake a Detailed Site Investigation (DSI) for the proposed mixed use development at 1 Kellicar Road, Campbelltown, NSW ('the site'). The purpose of the investigation is to make an assessment of site contamination and establish whether remediation of the site is required. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 attached to the appendices.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed mixed-use development, with regards to Chapter 4 (Clause 4.6) of State Environmental Planning Policy (Resilience and Hazards) 2021[2] (formerly known as SEPP55).

JKE has prepared the following reports for the proposed development at the site:

- Preliminary Site Investigation (PSI) (Ref: E36120PWrpt, dated 25 August 2023)[3]; and
- Preliminary Groundwater Quality Screening (Ref: E36120PWrpt2, dated 13 December 2023)[4].

A summary of the previous JKE reports is included in Section 2.

The PSI and preliminary groundwater quality screening were undertaken in conjunction with a geotechnical investigation by our geotechnical division, JK Geotechnics (JKG). The geotechnical report (36120YCrpt, dated 1 September 2023)[5] should be read in conjunction with this DSI report.

1.1 Proposed Development Details

Based on the latest supplied architectural plans prepared by DKO Architecture dated 3 May 2024, we understand that the proposed development includes the demolition of the current warehouse and associated structures, followed by the construction of eight, multi-storey, mixed-use buildings (buildings A to H). The proposed buildings will consist of residential apartments, with selected ground floor commercial land use, over two and three basement levels.

Landscaping is proposed within the central and northern portions of the open areas of the site. Deep soil areas are located along the western and southern site boundaries, across the central portion of the site and along parts of the eastern site boundary.

The proposed buildings will have between eight and 14 levels over three levels of basement car parking. It is understood that the basement levels for the proposed development are as follows:

- Stage 1a (Building D) the lowest basement level has a proposed finished floor level at Relative Level (RL) 61.8m Australian Height Datum (AHD);

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

[3] JKE, (2023a). *Report to AV Jennings SPV No25 Pty Ltd on Preliminary Site Investigation (PSI) for Proposed Mixed Use Development at 1 Kellicar Road, Campbelltown, NSW.* (referred to as the PSI)

[4] JKE, (2023b). *Report to AV Jennings SPV No25 Pty Ltd on Preliminary Groundwater Quality Screening for Proposed Mixed Use Development at 1 Kellicar Road, Campbelltown, NSW.* (referred to as the preliminary groundwater quality screening)

[5] JKG, (2023). *Report to AV Jennings SPV No25 Pty Ltd on Geotechnical Investigation for Proposed Mixed Use Development at 1 Kellicar Road, Campbelltown, NSW*. (referred to as the geotechnical investigation)

- Stage 1b (Building A, B and C) the lowest basement level has a proposed finished floor level at RL 66m AHD;
- Stage 2a (Building E and H) the lowest basement level has a proposed finished floor level at RL 67.25m AHD;
- Stage 2b (Building F and G) the lowest basement level has a proposed finished floor level at RL 69.6m AHD; and
- In-ground sewer pump stations are likely to be constructed approximately 1.5m to 2m below the proposed basement bulk excavation level, which requires bulk excavation to the order of approximately 13-14m below ground level (BGL).

Selected proposed development plans are attached in the appendices.

1.2 Aims and Objectives

The primary aims of the investigation were to make an assessment of the soil and groundwater contamination conditions at the site in order to assess risks in relation to contamination, and establish whether remediation is required.

The objectives were to:
- Assess the soil contamination conditions at the site;
- Make an assessment of the groundwater contamination conditions via sampling from three onsite monitoring wells previously installed during the PSI;
- Review and update (if required) the conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Comment on site suitability for the proposed development, with regards to contamination; and
- Facilitate the preparation of a Remediation Action Plan (RAP), where required.

1.3 Scope of Work

The investigation was undertaken generally in accordance with a JKE proposal (Ref: EP60737PW) of 30 May 2024 and written acceptance from the client of 6 June 2024. The scope of work included the following:
- Review of the PSI report;
- 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)[6], other guidelines made under or with regards to the

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

Contaminated Land Management Act (1997)[7] and SEPP Resilience and Hazards 2021. A list of reference documents/guidelines is included in the appendices.

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

2 SITE INFORMATION

2.1 Background Information

JKE was provided with the following letters/documents relating to the site, which were reviewed for the PSI:

- Due Diligence Environmental Inspection and Data Review by Environmental Consulting Services (ECS)[8];
- Due Diligence Environmental Investigation by ECS[9];
- Extracted pages of 1965 and 1970 aerial photographs of the site from a Lotsearch report; and
- Email correspondences between AV Jennings, ECS and Mitchell Brandman quantity surveyors dated 15 and 16 December 2022.

Based on a high-level review of the ECS documents, they indicate that the site was historically used for agricultural purposes. A former shed was demolished and a former dam was infilled on site. Limited soil investigation by ECS identified shallow fill in the southern area of the site. The site was apparently redeveloped to include the existing warehouse sometime between 1994 and 2005.

The letters make reference to two other reports previously prepared for the site which were not available to JKE. These included the following:

- Limited fill characterisation by Environmental and Earth Sciences, dated 15 February 2006; and
- Phase 1 Preliminary Site Investigation Bunnings Warehouse by ADE Consulting Group, dated 22 June 2021.

The ECS letters summarised the ADE report. The summary confirmed the presence of the former shed and infilled dam. The ADE report appeared to have been prepared when the existing warehouse was utilised as a Bunnings Warehouse.

2.2 Summary of PSI

The PSI included a review of site and site history information, a site walkover inspection, soil sampling from six geotechnical boreholes (BH1 to BH6 inclusive) and groundwater sampling from three monitoring wells (MW2, MW4 and MW6). The PSI sampling locations are shown on the Figure 2 attached in the appendices.

The site history information is summarised in the following table:

Table 2-1: Summary of Historical Land Uses / Activities

Year(s)	Potential Land Use / Activities
1916-1953	<u>Onsite:</u> • The site was owned (or leased) by private individuals with professions listed in the land titles including farmer and grazier; • The site had been most likely used for agricultural (farming and grazing) purposes; and • A farm dam had been constructed centrally at the site prior to 1947 (see indicative location on Figure 2).

[8] Environmental Consulting Services (ECS), (2022). *Due Diligence Environmental Inspection and Data Review at 1 Kellicar Road, Campbelltown*, dated 2 November 2022

[9] ECS, (2022*). Due Diligence Environmental Investigation at 1 Kellicar Road, Campbelltown*, dated 21 October 2022

Year(s)	Potential Land Use / Activities
	Off-site: • The surrounds appeared similar to the site and were most likely used for agricultural purposes (i.e. grazing).
1953-1998	Onsite: • Construction of rural type buildings/structures within the south-western portion of the site between 1961 and 1965 (see Figure 2); • Various earthworks activities including stockpiling and soil mounding had occurred; • The farm dam was in-filled between 1975 and 1984; and • Demolition and construction of rural type buildings/structures occurred during this time. Off-site: • The surrounds had been developed for commercial use from 1975 with the construction of Gilchrist Drive overpass and commercial centres to the west of the site.
1998-present	Onsite: • Re-development of the site for use as a commercial warehouse, including asphaltic concrete (AC) and concrete paved carparks since 1998; and • The historical land titles indicated that the site was occupied and used as a hardware retailer (Bunnings Warehouse) from at least 2009. Off-site: • The surrounds had been further developed for commercial land use, including additional warehouse type buildings; and • From 2005, the area located to the south-east of the site was re-developed for residential land use along with new roadways.

The PSI identified the following potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC) for the site:

- Fill material – 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;
- Wood preservation – Heavy metals, arsenic, PAHs, OCPs and the insecticide imidacloprid;
- Onsite electricity transformer (substation kiosk) – TRHs and PCBs;
- Historical agricultural use – Heavy metals, TRH, PAHs, OCPs, PCBs and asbestos;
- Use of pesticides – Heavy metals and OCPs; and
- Hazardous building materials - Asbestos, lead and PCBs.

It is noted that following the PSI, the client confirmed that the substation kiosk was not particularly old. Given the apparent age of the infrastructure, it was considered unlikely to be a valid AEC in the context of site contamination.

The boreholes drilled for the PSI identified fill (i.e. historically imported soil) to a maximum depth of approximately 0.6m below ground level (BGL), underlain by natural residual silty clay soil or siltstone bedrock. The fill contained inclusions of igneous, siltstone and ironstone gravel, clay fines and root fibres.

The preliminary soil and groundwater sampling and analysis identified fill/soil impacted by nickel above the ecological-based site assessment criteria (SAC), and copper, nickel and zinc concentrations in groundwater in exceedance of the ecological-based SAC.

Historical agricultural land use is listed in Table 1 of the SEPP55 Planning Guidelines as an activity that may cause contamination and a DSI is required to characterise risks and establish whether remediation is necessary. The PSI recommended that a DSI be undertaken to characterise the risks and inform the preparation of a RAP, if required.

2.3 Summary of Preliminary Groundwater Quality Screening

The primary aim of the preliminary groundwater quality screening was to provide preliminary groundwater quality data that could be used to support an application for a temporary construction dewatering license from WaterNSW. The scope of work included: sampling from the three monitoring wells (MW2, MW4 and MW6) installed as part of the JK geotechnical investigation in conjunction with the PSI; analysis of groundwater samples for a range of contaminants and parameters; interpretation of the results; data quality assessment; and preparation of a screening report.

The screening identified the following groundwater laboratory results above the SAC:

- pH from MW2 was outside of the human health and ecological-based SAC range;
- Copper concentrations from MW2 and MW4 were above the ecological-based SAC; and
- Nickel and zinc concentrations from all three monitoring wells exceeded the ecological-based SAC.

The screening did not include an assessment of the presence of the insecticide imidacloprid in groundwater (identified as a CoPC in the PSI). The screening recommended that the potential for presence of imidacloprid must be adequately considered prior to the discharge of any groundwater from the site and this assessment was to occur prior to the preparation of a Dewatering Management Plan (DMP) for the site.

The preliminary groundwater quality screening concluded that a specialist contractor must be contacted to design an appropriate water treatment system to facilitate the disposal of groundwater during temporary construction dewatering, should off-site disposal of groundwater to stormwater be required. The relevant consent authorities should be contacted to clarify the requirements to obtain disposal approval to stormwater or sewer.

Reference to the preliminary groundwater quality screening report should be made regarding details or additional information.

2.4 JKG Geotechnical Investigation

The geotechnical investigation included the drilling of six boreholes (BH1 to BH6 inclusive) in conjunction with the PSI. The boreholes extended to depths ranging from approximately 10mBGL to 20mBGL. The boreholes identified fill to depths ranging from approximately 0.3mBGL to 0.6mBGL, underlain by natural (residual) silty clay soil. Siltstone bedrock was encountered in all boreholes at depths ranging from approximately 0.3mBGL to 1.3mBGL.

Groundwater seepage was not encountered within the boreholes during and on completion of auger drilling. Groundwater observations were undertaken within the monitoring wells MW2, MW4 and MW6 on 30 Augst 2024 and the measurements are summarised in the following table:

Table 2-2: Groundwater Measurements Undertaken on 30 August 2024

Results of Groundwater Monitoring			
Monitoring Well No.	Surface RL (mAHD)	Depth to Groundwater (mBGL)	Groundwater RL (mAHD)
2	76	5.7	70.3
4	73	4.3	68.7
6	73	5.1	67.9

Reference should be made to the geotechnical investigation report regarding further details or recommendations.

2.5 Site Identification

Table 2-3: Site Identification

Site Owner (certificate of title at the time of PSI):	Dumarchand Holdings Pty Ltd Dankaur Pty Ltd It is understood that ownership had changed by the date of this DSI, however, JKE has not received any updated details relating to the change in ownership.
Site Address:	1 Kellicar Road, Campbelltown, NSW
Lot & Deposited Plan:	Lot 1 in DP 882496
Current Land Use:	Commercial warehouse for furniture retailer and timber supplier
Proposed Land Use:	Mixed use including ground floor commercial (retail) and residential above
Local Government Area:	Campbelltown City Council
Current Zoning:	SP2 – Infrastructure (vicinity of north-western overpass bridge); and MU1 – Mixed Use (remainder of site)
Site Area (m^2) (approx.):	25,500 (2.55ha)
RL (AHD in m) (approx.):	71-83
Geographical Location (decimal degrees) (approx.):	Latitude: -33.07229 Longitude: 150.80119
Site Plans:	Appendix A

2.6 Site Description

The site is located in a predominantly commercial area of Campbelltown and is bound by Kellicar Road to the south, Menangle Road to the north, Gilchrist Drive to the west and Bugden Place to the east. The site is located approximately 70m to the south of Bow Bowing Creek.

The site is located on the side of a gently sloping, north-facing hillside. The site itself grades down to the north between about 1° to 3°. Bow Bowing Creek is located approximately 70m the north of the site. The site has been cut into the hillslope.

The regional topography gently slopes to the north. The site slopes towards the north at approximately 1°-3°. Localised falls within the eastern portion of the site slopes towards the east at approximately 1°-2°. Parts of the site towards the southern and western boundaries appear to have been cut into the existing north facing hillside to accommodate the existing site levels and development.

The most recent site inspection was undertaken by JKE between 17 and 22 June 2024 for the DSI. The site conditions were generally similar to the observations made during the PSI inspection. Key findings are summarised below:

- The site was occupied by a storage/distribution warehouse used for a furniture retailer (Koala) and timber supplied (BOM Timber Supplies) with in the northern half of the warehouse;
- The building onsite included a single-storey warehouse building of metal and concrete construction. Metal awnings extending towards the eastern and western sides of the warehouse which accommodated an AC paved car park for the furniture retailer (Koala) and the timber supplier business (BOM Timber) respectively. The onsite building appeared to be in a reasonably good condition based on a cursory inspection;
- External areas of the site included AC paved carparks and access driveways. A concrete paved areas was located within the north-western portion of the site, beneath a public roadway bridge and was used for timber storage and distribution. The onsite pavements generally appeared in good condition based on an external cursory inspection;
- An electricity transformer was located within the northern portion of the site. The electricity transformer could contain oils and is considered to be a potential source of contamination;
- The site was generally unfenced along the northern, western and southern boundaries, which were open to their respective roadways. Parts of the eastern site boundary was defined by brick retaining walls that ranged from 1.5m to 2.5m in height. Erosion or soil instability were not observed at the site based on the visual inspection;
- Chemicals were observed within the northern timber supplier business. The chemicals were stored on a plastic bund or directly on the concrete floor and included insecticide (Tanalith) containing imidacloprid stored in a 1,000L intermediate bulk container (IBC); water sprayer pigment (Blue 250) stored in 20L plastic drums; and truck wash detergent concentrate stored in 20L plastic drums. The insecticide imidacloprid is toxic to aquatic organisms and is considered to be a CoPC with regards to groundwater;
- Staining and free liquid was observed on the concrete floor within the chemical storage and wood treatment area associated with the timber supplier business. Blue staining was also observed over several stormwater drainage pits located within the timber supplier business;

- The site appeared to have been cut into the north facing hill along the south and parts of the western boundaries. Brick retaining walls of approximately 1.6m to 2m in height extended along the south and western portions of the site, where a grassed embankment was retained to the high-side of the retaining walls. The north-eastern site boundary was also elevated from the adjacent Bugden Place levels, where parts of the north-eastern portion of the site was supported by brick retaining walls. Fill was considered likely to be present behind the brick retaining walls located along the western and parts of the north-eastern site boundaries;
- Open stormwater drains and concrete swales were located within parts of the open paved areas of the site, and gutters and downpipes extended from the rood of the warehouse building, connecting to underground stormwater infrastructure. The onsite stormwater is assumed to discharge into the local stormwater network to the north of the site. Surface water would be expected to infiltrate unpaved areas of the site and flow overland towards the north and east in sympathy with the onsite topography.
- Sensitive environments such as wetlands, ponds, creeks or extensive areas of natural vegetation were not identified on site or in the immediate surrounds. Bow Bowing Creek was located approximately 70m to the north and down-gradient of the site; and
- Native and exotic trees of up to 10m in height and exotic grass were located along the retained batters within the southern and western portions of the site. Obvious die-back or phytotoxic stress was not observed.

2.7 Surrounding Land Use

During the DSI site inspection, JKE observed the following land uses in the immediate surrounds:
- North – Menangle Road and Macarthur railway line;
- South – Kellicar Road and single to two-storey residential houses;
- East – Budgen Place and a commercial precinct including a health service provider. RMS heavy vehicle inspection station, gym facility (Club Lime), retail shops and a restaurant (Kickin'Inn); and
- West – Gilchrist Drive and vacant grassed allotment and Macarthur tavern.

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

2.8 Underground Services

The 'Before You Dig Australia' (BYDA) 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. The BYDA plans indicated that a high-pressure gas main and water main extended through the western portion of the site, parallel with the western site boundary (see Figure 2). These mains are understood to be at depths of greater than 3mBGL, however reference should be made directly to these plans for any details.

A series of 'as-built' plans prepared for the site were supplied by the client following the PSI. A review of the plans indicated that local services (water and electricity) were present throughout the site and were predominantly concentrated within the southern portion and beneath the existing warehouse.

2.9 Local Meteorology

Key meteorological data for the Campbelltown (Mount Annan) weather station available on the Bureau of Meteorology (BOM)[10] website has been reviewed and JKE note the following:

- The highest mean rainfall occurs in March, with a total of 108.9mm;
- The lowest mean rainfall occurs in September, with a total of 35.7mm; and
- In the two-week (14 days) lead up to the DSI field work commenced on 17 June 2024, the wider site surrounds received 131mm of rainfall.

[10] http://www.bom.gov.au/jsp/ncc/cdio/weatherData/av?p_display_type=dailyDataFile&p_nccObsCode=136&p_stn_num=068257&p_c=-931862841&p_startYear=2024 visited on 5 July 2024

3 SUMMARY OF GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology and Subsurface Conditions

Regional geological information reviewed for the PSI indicates that the site is underlain by Ashfield Shale of the Wianamatta Group, which typically consists of black to dark grey shale and laminate.

A summary of the subsurface conditions encountered during the PSI is presented in the following table:

Table 3-1: Summary of Subsurface Conditions Encountered during the PSI

Profile	Description
Pavement	AC pavement was encountered at the surface in BH1, BH2, BH5 and BH6 and was approximately 40mm to 50mm thick. Concrete pavement was encountered at the surface in BH3 and BH4 and was approximately 170mm to 180mm thick.
Fill	Fill was encountered beneath the pavement in all boreholes and extended to depths of approximately 0.1mBGL to 0.6mBGL. The fill was typically brown, grey and dark grey and comprised sandy clay, gravelly sand and granular road base with inclusions of igneous, siltstone and ironstone gravel, clay fines and root fibres. Staining or odours were not observed in the fill during sampling. Fibre cement fragments (FCF) was also not observed.
Natural Soil	Silty clay (residual) natural soil was encountered beneath the fill in BH1, BH5 and BH6 and extended to depths of approximately 0.75mBGL to 1.3mBGL. The natural soil was typically red brown, yellow brown and light grey and contained inclusions of ironstone gravel and ash. Staining or odours were not observed in the natural soil during sampling.
Bedrock	Siltstone bedrock was encountered beneath the fill or natural soil in all boreholes and extended to the termination of the boreholes at a maximum depth of approximately 20.1mBGL. The bedrock was typically red brown, grey and dark grey and contained occasional iron indurated bands.
Groundwater	Groundwater seepage was not encountered in the boreholes during auger drilling. All boreholes remained dry on completion of auger drilling and a short time after. Potable water was introduced into the boreholes as required for rock coring. Therefore, groundwater observation during coring could not occur. BH2, BH4 and BH6 were converted into monitoring wells to enable better observation of the groundwater levels are discussed further below.

3.2 Acid Sulfate Soil (ASS) Risk and Planning

Acid sulfate soil (ASS) risk maps prepared by the Department of Land and Water Conservation (1997) reviewed as part of the PSI indicated that the site is not located within a risk area.

ASS information presented in the Lotsearch report reviewed for the PSI indicated that the site is not located within an ASS risk area.

3.3 Hydrogeology

Hydrogeological information reviewed for the PSI 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 a total of 27 registered bores within the report buffer of 2,000m. The nearest registered bore was located approximately 520m from the site. This was utilised for monitoring purposes. All of the listed bores were registered for monitoring purposes. The drillers log information from the closest registered bores typically identified fill and/or clay soil to depths of 1.25-1.6mBGL, underlain by shale bedrock. Standing water levels (SWLs) in the bores ranged from 3mBGL to 6.2mBGL.

The information reviewed for the PSI indicated that the subsurface conditions at the site are likely to consist of relatively low permeability (residual) soils overlying shallow bedrock. The potential for viable groundwater abstraction and use of groundwater under these conditions was considered to be low. 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.

A summary of the groundwater field screening conditions encountered during the PSI is presented in the following table:

Table 3-2: Summary of Groundwater Field Screening

Aspect	Details
Groundwater Depth & Flow	SWLs measured in the monitoring wells installed during sampling at the site ranged from 4.35mBGL to 5.73mBGL. Groundwater RLs calculated on these measurements ranged from approximately 67.9mAHD to 70.3mAHD. The groundwater RLs indicate that excavation for the proposed basement may intercept groundwater and that groundwater flows likely tend in a northerly direction (detailed assessment of the groundwater flow direction was not within the scope of the PSI).
Groundwater Field Parameters	Field measurements recorded during sampling were as follows: - pH ranged from 5.63 to 6.84; - EC ranged from 2,170µS/cm to 5,203µS/cm; - Eh ranged from -207.8mV to -144.7mV; and - DO ranged from 0.4ppm to 2.9ppm. The PID readings in the monitoring well headspace recorded during sampling ranged from 0.6ppm in MW2 to 357ppm in MW4.
LNAPLs petroleum hydrocarbons	Phase separated product (i.e. LNAPL) was not detected using the interphase probe during groundwater sampling.

3.4 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of (i.e. adjacent to) the site. The closest surface water body is Bow Bowing Creek located approximately 70m to the north of the site. This is down-gradient from site, is considered to be a potential receptor and is a freshwater environment.

4 REVIEW AND UPDATE OF 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 review of background/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 8.

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 has been historically filled to achieve the existing levels. The fill may have been imported from various sources and could be contaminated. Fill may have been 'won' from on-site excavations and been placed during previous earthworks. Previous investigations identified relatively shallow fill in the southern area of the site. Deeper fill is expected in the former dam area and at the peak of retaining walls from fill earthworks. Fill depths (which include pavement thickness at locations where pavements exist, are shown on Figure 2. A number of stockpiles, mounds and possible earthworks activity were observed at the site from the 1961 aerial photograph. The PSI encountered fill to depths of 0.1mBGL to 0.6mBL across the site.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (TRHs), BTEX, PAHs, OCPs, OPPs, PCBs and asbestos.
Wood preservation – The northern portion of the site was occupied and used as a timber supplier storage warehouse during the JKE inspection. JKE identified timber preservation works, along with pesticide chemicals stored within the northern part of the existing warehouse in a 1,000L IBC. Staining and spills were observed on the concrete floor near the vicinity of the chemical IBC as a result of routine use.	Heavy metals, arsenic, PAHs, OCPs and the insecticide imidacloprid.
Historical agricultural use – The site appears to have been used for farming and grazing purposes since at least 1916. Agricultural activities could have continued into the 1980s based on the rural type buildings/structures observed in the aerial photographs. Historical agricultural activities could have resulted in contamination across the site via use of machinery, application of pesticides and building/ demolition of various structures. Irrigation pipes made from asbestos cement may also be associated with this AEC.	Heavy metals, TRH, PAHs, OCPs, PCBs 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.	Heavy metals and OCPs.

Source / AEC	CoPC
Hazardous Building Material – Hazardous building materials may be present as a result of former building and demolition activities. There had been building construction and demolition activities observed within the southern portion of the site since 1965 and more recently, in 2011.	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	Potential mechanisms for contamination include: • Fill material – importation of impacted material, 'top-down' impacts (e.g. placement of fill, leaching from surficial material etc), or sub-surface release (e.g. impacts from buried material); • Wood preservation – 'top-down', and spills (e.g. during normal use, application to wood and/or improper storage of chemicals); • Historical agricultural use – 'top-down' and spills (e.g. application of pesticides, refuelling or repairing machinery, and other activities at the ground surface level); • Use of pesticides – 'top-down' and spills (e.g. during normal use, application and/or improper storage); and • Hazardous building materials – 'top-down' (e.g. demolition resulting in surficial impacts in unpaved areas).
Affected media	Soil and groundwater have been identified as potentially affected media.
Receptor identification	Human receptors include site occupants/users (including adults and children), construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users, or recreational water users in down-gradient water bodies. It is noted that the closest down-gradient portion of Bow Bowing Creek is a concrete lined stormwater channel and is unlikely to be utilised for recreational purposes. However, downstream receptors may exist. Ecological receptors include terrestrial organisms and plants within unpaved areas (including the proposed landscaped areas). Ecological receptors include freshwater ecology in the downstream areas of Bow Bowing Creek.
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. 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 and basements. Exposure to groundwater is unlikely to occur in the closest areas of Bow Bowing Creek through direct migration as the creek is concrete lined. Based on further

	review of the CSM, we are of the opinion that there are unlikely to be persistent/regular recreational water users within the closest section of Bow Bowing Creek as the creek is used as a concrete lined stormwater channel. However, groundwater has the potential to enter the creek via the stormwater system (which is expected to discharge into the creek) in a drained basement scenario (if adopted), and the potential for incidental exposure to groundwater particularly during construction is possible. Therefore, this potential pathway has been assessed via the recreational water exposure criteria.
Potential exposure mechanisms	The following have been identified as potential exposure mechanisms for site contamination: • Vapour intrusion into the proposed basement and/or building (either from soil contamination or volatilisation of contaminants from groundwater); • Contact (dermal, ingestion or inhalation) with exposed soils in landscaped areas and/or unpaved areas; • Contact with groundwater during construction; and • Migration of groundwater off-site and into nearby/downstream water bodies, including aquatic ecosystems, and recreational water users.

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 8.1 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. 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.

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.

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 of the laboratory results above the SAC?
- 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 the PSI;
- Sampling of potentially affected media, including soil and groundwater;
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining, 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 was confined to the site boundaries as shown in Figure 2 and was limited vertically to a maximum depth of approximately 2.2mBGL for soil sampling and approximately 20mBGL for groundwater sampling (spatial boundary). The sampling was completed between 17 and 22 June 2024 (temporal boundary). The assessment of potential risk to adjacent land users has been made based on data collected within the site boundary.

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

5.1.5.1 Tier 1 Screening Criteria

The laboratory data was 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.

Where appropriate, data are assessed against valid statistical parameters to characterise the data population. This may include calculation and application of mean values and/or 95% upper confidence limit (UCL) values for the data set, with regards to the NEPM (2013) framework and other relevant guidelines made under the CLM Act 1997. UCLs are considered acceptable where the UCL is below the SAC, the standard deviation of the data is less than 50% of the SAC and none of the individual concentrations are more than 250% of the SAC.

For the DSI, the following decision rules will apply:

- If all CoPC (with the exception of asbestos) concentrations are below the SAC, then the data will be compared directly to the SAC without statistical analysis;
- For soil data, if any individual CoPC (with the exception of asbestos) concentration is above the SAC, then statistical analysis will be undertaken. This will include calculation of the 95% upper confidence limit (UCL) value for the data set, with regards to the NEPM (2013) framework and other relevant guidelines made under the CLM Act 1997. The UCL will be considered acceptable where the UCL is below the SAC, the standard deviation of the data is less than 50% of the SAC and none of the individual concentrations are more than 250% of the SAC;
- If asbestos concentrations are encountered above the SAC or in the top 100mm of soil, then asbestos will be deemed a contaminant of concern for remediation purposes; and
- Groundwater data will be compared directly to the SAC and evaluated with regards to valid/complete SPR-linkages.

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.

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 (H_0) is that the 95% UCL for the CoPC is greater than the SAC. The alternative hypothesis (H_A) is that the 95% UCL for the CoPC is less than the SAC. Alternative considerations are made regarding asbestos based on an assessment of multiple lines of evidence.

Potential outcomes include Type I and Type II errors as follows:

- Type I error of determining that the soil is acceptable for the proposed land use when it is not (wrongly rejects true H_0), includes an alpha (α) risk of 0.05; and
- Type II error of determining that the soil is unacceptable for the proposed land use when it is (wrongly accepts false H_0), includes beta (β) risk of 0.2.

UCLs will be considered acceptable where the UCL is below the SAC, the standard deviation of the data is less than 50% of the SAC and none of the individual concentrations are more than 250% of the SAC. However, where statistical analysis is applied in accordance with Step 5 via the calculation of UCL values, the potential for decision errors to occur will also be evaluated using the Combined Risk Value (CRV) method as outlined in Appendix E of the NSW EPA Sampling Design Part 1 – Application (2022)[11] contaminated land guidelines. The CRV method will be used retrospectively to establish whether there is sufficient statistical power in the UCL.

Statistical analysis will not apply to asbestos or groundwater data, therefore these data will be assessed based on a multiple lines of evidence and risk-based approach.

Data Quality Indicators (DQI) for field and laboratory QA/QC samples are defined in the QA/QC Data Evaluation in the appendices. An assessment of the DQI's was made in relation to precision, accuracy, representativeness, completeness and comparability.

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	Samples were obtained from 37 largely grid-based locations (BH101 to BH137 inclusive) as shown on the attached Figure 2. This number of locations met the minimum sampling density for hotspot identification, as outlined in the EPA Sampling Design Guidelines 2022. Based on the above density, and the square grid spacing of 27m, the following approximate hotspot diameters have been calculated: • Circular hotspot diameter with a 95% confidence level (K value of 0.59) – 31.9m; and • Elliptical hotspot diameter with a 95% confidence level (K value of 0.9) – 48.6m along the long dimension. An additional two locations (BH137 and BH138) were targeted at the onsite timber treatment area/chemical store within the chemical storage room.
Sampling Plan	The sampling locations were placed on a systematic plan with a grid spacing of approximately 27m between sampling location. A systematic plan was considered suitable to identify hotspots to a 95% confidence level and calculate UCLs for specific data populations (UCLs were only applied were appropriate and in accordance with the DQOs).

[11] NSW EPA, (2022). *Sampling design part 1 - application.* (referred to as EPA Sampling Design Guidelines 2022)

Aspect	Input
	The additional two boreholes were targeted at the existing timber treatment area/chemical storage room located within the north-western portion of the site, within the existing warehouse.
Set-out and Sampling Equipment	Sampling locations were set out using a differential GPS unit (with an accuracy of approximately ±0.03m horizontal) for locations outside of buildings and using a tape measure for locations within buildings or under structures. In-situ sampling locations were checked for underground services by an external contractor prior to sampling. Samples were collected using a push tube drill rig and 150mm diameter auger and hand auger. Soil samples were obtained from disposable polyethylene push tube samplers and directly from the auger. Each borehole was initially advanced using push tubes for standard contamination sampling, then subsequently using a 150mm diameter auger to facilitate the asbestos quantification sampling. Soil samples were obtained directly from the hand auger.
Sample Collection and Field QA/QC	Soil samples were obtained between 17 and 22 June 2024 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. 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 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. Any soil clumps/nodules were disaggregated; • 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. Bulk samples for asbestos quantification could not be obtained during soil sampling from all sample locations or from all fill profiles due to the low sample volume return, or due to the presence of thin/narrow fill profiles beneath pavements. However, 500mL samples were obtained from the majority of sampling locations where fill was encountered for asbestos analysis at the

Aspect	Input
	laboratory. For sampling locations where 500mL asbestos samples were unable to be collected due to low sample return, a 40g sample for asbestos presence and absence were analysed. 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.
Decontamination 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 BH2 (MW2), BH4 (MW4) and BH6 (MW6) as part of the geotechnical investigation and the PSI. The wells were positioned to gain a snap-shot of the groundwater conditions. Considering the topography and the location of the nearest down-gradient water body, MW2 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 south. MW4 and MW6 were considered to be in the intermediate to down-gradient areas of the site and would be 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 depths of approximately 10mBGL to 20mBGL 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.

Aspect	Input
Monitoring Well Development	The monitoring wells were developed on 17 and 18 June 2024 using a Waterra foot valve for MW2 and MW6 and a submersible electrical pump for MW4. Due to the hydrogeological conditions, groundwater inflow into MW2 and MW4 was relatively low, therefore these wells were pumped until they were effectively dry. MW6 was developed until steady state conditions were achieved using a Waterra foot valve. 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 three to four days after development. Groundwater samples were obtained on 21 June 2024. Prior to sampling, the monitoring wells were checked for the presence of 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: • 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. Groundwater samples were obtained using a peristaltic pump, 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. The field monitoring record and calibration data are attached in the appendices.
Decontaminant and Sample Preservation	During development, a new Waterra foot valve and tubing were used for each well. New tubing was also utilised for each well during sampling with the peristaltic pump. The pump was flushed with potable water prior to development of MW4. The Waterra foot valve and tubing were 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 Analytical Schedule

Analysis targeted the fill samples for site coverage and included analysis of the samples for the CoPC identified for fill. The fill CoPC included a broad suite of potential contaminants, which also addressed the other onsite AEC and their associated CoPC as applicable. Selected natural soil and siltstone bedrock profiles were targeted to demonstrate the potential for (or lack of) vertical leaching of contaminants in the overlying fill. Heavy metals, TRH and OCPs were targeted for BH138 and BH139, which were drilled within the existing timber treatment area and chemical storage room for to address this soil AEC.

OCPs and in particular, the insecticide imidacloprid (listed as a CoPC associated with the timber treatment), targeted the groundwater at the site to provide an indication of potential groundwater contamination as a result of the onsite timber treatment area/chemical storage room as outlined in the CSM.

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 5-3: 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)	354641, 354641-A and 354595
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	MFF0447 and MFF0433

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 'residential with minimal opportunities for soil access' exposure scenario (HIL-B);
- Health Screening Levels (HSLs) for a 'commercial/industrial' exposure scenario (HSL-D) as the proposed development will comprise basement car parking and ground floor commercial land uses. 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)[12]; and
- Asbestos was assessed against the HSL-B 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-B 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)[13]. The SAC include the following: • No visible asbestos at the surface/in the top 10cm of soil; • <0.04% 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): $$\textbf{\% w/w asbestos in soil} = \frac{\textbf{\% asbestos content x bonded ACM (kg)}}{\text{Soil volume (L) x soil density (kg/L)}}$$ However, we are of the opinion that the actual soil volume in a 10L 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):

[12] 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*

[13] 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 = $\frac{\textbf{\% asbestos content x bonded ACM (g)}}{\text{Soil weight (g)}}$

6.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for an 'urban residential and public open space' (URPOS) 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[14];
- ESLs were adopted based on the soil type;
- EILs for selected metals were calculated using site specific soil parameters for pH and cation exchange capacity (CEC). An averaged value was calculated for fill sand, and individual soil parameters for pH and CEC for the fill clay sample BH102 (0.18-0.3m) have been tabulated for reference for use to select the added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013), and published ambient background concentration (ABC) presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)[15]. 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.

6.2 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)[16]. Environmental values for this investigation include aquatic ecosystems, human uses (incidental contact and recreational water use), and human-health risks in non-use scenarios (vapour intrusion).

6.2.1 Human Health

- HSLs for a 'commercial/industrial' exposure scenario (HSL-D). HSLs were calculated based on a 'sand' soil type and a 2-4m groundwater level. This was run as a 'first pass' on the groundwater data. However, due to the presence of shallow siltstone bedrock and because the proposed basement may intersect groundwater, the NEPM 2013 HSLs are not strictly applicable. Therefore, we have also used a selection of alternative Tier 1 criteria that are considered suitably protective of human health in

[14] 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)

[15] 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.

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

relation to vapour intrusion from groundwater. These criteria are based on drinking water guidelines and have been referred as HSL-SSA. The criteria are based on the following:

- Australian Drinking Water Guidelines 2011 (updated 2021)[17] 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)[18] for petroleum hydrocarbons. We have conservatively adopted the value of 100µg/L for TRH F1 and F2; and
- USEPA Region 9 screening levels for naphthalene (threshold value for tap water).

- 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 downstream water bodies, or with seepage water in the basement). These have been deemed as 'recreational' SAC.

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)[19]. For the insecticide imidacloprid, for which there is no Australian guideline, the Interim Guideline Values in the Canadian Water Quality Guidelines for the Protection of Aquatic Life (2007)[20] have been considered.

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.

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

[18] 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)

[19] 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)

[20] Canadian Council of Ministers of the Environment (CCME), (2007). *Canadian water quality guidelines for the protection of aquatic life: Imidacloprid. In: Canadian environmental quality guidelines 1999* (referred to as the Canadian Water Quality Guidelines 2007)

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 logs attached in the appendices for further details.

Table 7-1: Summary of Subsurface Conditions

Profile	Description
Pavement	Concrete pavement was encountered at the surface in BH101, BH102, BH103, BH104, BH107, BH108, BH109, BH110, BH113, BH114, BH115, BH119, BH120, BH124, BH125, BH138 and BH139. The concrete pavement was approximately 120mm to 220mm thick. AC was encountered at the surface in BH105, BH106, BH111, BH112, BH116, BH117, BH121, BH122, BH126, BH129, BH130, BH131, BH132, BH135 and BH137. The AC pavement was approximately 10mm to 80mm thick.
Fill	Fill was encountered at the surface or beneath the pavement in all boreholes and extended to depths of approximately 0.16mBGL to 2.2mBGL. BH101, BH103, BH108, BH112, BH117, BH123, BH125, BH128 and BH138 were terminated in the fill at a maximum depth of approximately 2.2mBGL. It is possible that termination occurred on obstructions in the fill, or due to the presence of natural soil/rock beneath the fill that could not be penetrated with the equipment that was utilised. The fill typically comprised silty clay, silty gravelly clay, gravelly sand, clayey sand and silty sand with inclusions of igneous and ironstone gravel, siltstone gravels and cobbles, sand, asphalt fragments, building rubble (concrete and tile fragments), plastic fragments, clay nodules, bark, slag, roots and root fibres. Staining or odours were not observed within the fill during sampling.
Natural Soil	Silty clay (residual) soil was encountered beneath the fill in BH102, BH105, BH106, BH110, BH111, BH116, BH118, BH133, BH137 and BH138 and extended to depths of approximately 0.35mBGL to 1.8mBGL. the natural soil was typically grey and mottled red brown and contained inclusions of ironstone gravel, siltstone bands and root fibres. Staining or odours were not observed within the natural soil during sampling.
Bedrock	Siltstone bedrock was encountered beneath the fill or natural soil within BH104, BH106, BH107, BH109, BH113, BH114, BH115, BH116, BH119, BH120, BH121, BH122, BH124, BH127, BH129, BH130, BH131, BH132, BH134, BH135, BH136 and BH137 and extended to the termination of the boreholes at a maximum depth of approximately 2.2mBGL. The siltstone bedrock was typically grey and brown and contained occasional iron indurated bands. Staining or odours were not observed within the bedrock during sampling.
Groundwater	Groundwater seepage was not encountered in the boreholes during drilling. All boreholes remained dry on completion of drilling and a short time after.

7.3 Field Screening

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

Table 7-2: Summary of Field Screening

<table>
<tr><th>Aspect</th><th>Details</th></tr>
<tr><td>PID Screening of Soil Samples for VOCs</td><td>PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. The results ranged from 0.14ppm to 3.4ppm equivalent isobutylene. These results indicate low to negligible PID detectable VOCs in the samples.</td></tr>
<tr><td>Bulk Screening for Asbestos</td><td>The bulk field screening results are summarised in the attached report Table S5. All results were below the SAC. Asbestos/FCF was not observed in any of the samples.

Due to the access constraints associated with investigating an operational site, samples were collected from boreholes and the bulk screening volumes were predominantly less than 10L. Bulk samples also could not be obtained from some locations/fill profiles due to the low sample volume that was available.</td></tr>
<tr><td>Groundwater Depth & Flow</td><td>Groundwater seepage was not encountered in the boreholes during drilling. All boreholes remained dry on completion of drilling and a short time after.

SWLs measured during sampling within the monitoring wells installed at the site ranged from 3.95mBGL to 4.95mBGL. Groundwater RLs were calculated based on the surveyed monitoring well height and measured SWLs during groundwater sampling, as summarised below:

<table><tr><th>Location</th><th>Approx. Ground Surface RL (mAHD)</th><th>SWL (mBGL)</th><th>Approx. Groundwater RL (mAHD)</th></tr><tr><td>MW2</td><td>75.79</td><td>4.95</td><td>70.84</td></tr><tr><td>MW4</td><td>73</td><td>3.95</td><td>69.05</td></tr><tr><td>MW6</td><td>73.49</td><td>4.34</td><td>69.15</td></tr></table>
The above calculated groundwater RLs indicate that excavation for the proposed basement may intercept groundwater.

A contour plot was prepared for the groundwater levels using Surfer v11 (Surface Mapping Program) as shown on Figure 4. Groundwater flow generally occurs in a down gradient direction perpendicular to the groundwater elevation contours. The contour plot indicates that groundwater generally flows towards the north which is consistent with expectations based on the topography and nearest down-gradient creek line.</td></tr>
<tr><td>Groundwater Field Parameters</td><td>Field measurements recorded during sampling were as follows:
- pH ranged from 6.72 to 6.99;
- EC ranged from 1,868µS/cm to 2,897µS/cm;
- Eh ranged from 33mV to 170.5mV; and
- DO ranged from 0.3ppm to 4.6ppm.

The PID readings in the monitoring well headspace recorded during sampling were 0ppm across all monitoring wells.</td></tr>
<tr><td>LNAPLs petroleum hydrocarbons</td><td>Phase separated product (i.e. LNAPL) was not detected using the interphase probe during groundwater sampling.</td></tr>
</table>

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	47	14	0	0	-
Cadmium	47	<0.4	0	NSL	-
Chromium (total)	47	30	0	0	-
Copper	47	81	0	0	-
Lead	47	62	0	0	-
Mercury	47	0.14	0	NSL	-
Nickel	47	100	0	0	-
Zinc	47	200	0	0	-
Total PAHs	47	4.9	0	NSL	-
Benzo(a)pyrene	47	0.53	NSL		-
Carcinogenic PAHs (as BaP TEQ)	47	0.8	0	NSL	-
Naphthalene	47	<1	0	NSL	-
DDT+DDE+DDD	42	<0.1	0	NSL	-
DDT	42	<0.1	NSL	0	-
Aldrin and dieldrin	42	<0.1	0	NSL	-
Chlordane	42	<0.1	0	NSL	-
Heptachlor	42	<0.1	0	NSL	-
Chlorpyrifos (OPP)	40	<0.1	0	NSL	-
PCBs	40	<0.1	0	NSL	-

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
TRH F1	45	<25	0	0	-
TRH F2	45	50	0	0	-
TRH F3	45	460	0	2	TRH F3 concentrations exceeded the ecological SAC of 300mg/kg in two fill samples collected from BH112 (0.02-0.2m), including its lab replicate sample, and from BH134 (0-0.1m) including from its field duplicate sample (SDUP101).
TRH F4	45	540	0	0	-
Benzene	45	<0.2	0	0	-
Toluene	45	<0.5	0	0	-
Ethylbenzene	45	<1	0	0	-
Xylenes	45	<1	0	0	-
Asbestos (in soil) (%w/w)	31	<0.01%w/w ACM <0.001%w/w AF/FA	0	NA	Asbestos was not detected within the samples analysed.

Notes:

N: Total number (primary samples)

NSL: No set limit

NL: Not limiting

7.4.2 Statistical Analysis

Statistical calculations were undertaken on the TRH F3 results using ProUCL (Version 5.1) where sufficient data was available to facilitate the calculation of the 95% upper confidence level (UCL) and comparison of the UCL with the ESL. The UCL output is attached in the appendices and the statistical data is summarised in Table S6.

In summary, the statistical analysis indicated that the TRH F3 standard deviation (SD) of 94.64mg/kg is less than 50% of the lowest ecological-based SAC of 300mg/kg, and that the 95% UCL result of 165mg/kg is less than the lowest SAC of 300mg/kg.

The above SD and UCL were considered to be within the acceptable limits for statistical analysis. Although JKE note that the dataset used for the statistical analysis included both fill and some siltstone samples, this was due to that fact that fill was not encountered within selected boreholes (i.e. there was siltstone beneath concrete pavement). As the siltstone results were in-line with many of the fill results (i.e. TRHs were not detected above the PQL), the inclusion of the limited number of siltsone results in the dataset is not considered to have altered the outcome unacceptably.

Based on the statistical analysis above, the CRV calculation resulted in an 'n' value (i.e. required number of samples) of less than two samples. The low n value is consistent with expectations considering the low standard deviation and mean, and it confirms that the false rejection (α) error rate has been satisfied and it is reasonable to reject H_0 (i.e. that the site is unacceptably contaminated with TRH F3).

Another robust line of evidence is the interpretation of the laboratory TRH chromatographs obtained for the TRH F3 and this is discussed further in Section 8 as part of the Tier 1 risk assessment.

7.5 Groundwater Laboratory Results

The groundwater 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 7-4: 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	2	0	0	-
Cadmium	3	<0.1	0	0	-
Chromium (total)	3	<1	0	0	-
Copper	3	<1	0	0	-
Lead	3	<1	0	0	-
Mercury	3	<0.05	0	0	-
Nickel	3	6	0	0	-
Zinc	3	16	0	1	The zinc concentration in MW4, including in its lab replicate sample and its field duplicate sample (WDUP101), exceeded the ecological SAC.
Total PAHs	3	<0.1	0	0	-
Benzo(a)pyrene	3	<0.1	0	0	-
Naphthalene	3	<0.1	0	0	-
Imidacloprid	3	0.41	NSL	1	The imidacloprid concentration in MW4, including in its field duplicate sample (WDUP101), exceeded the adopted ecological SAC. Imidacloprid was not detected in the remaining samples from the other two wells.
DDT+DDE+DDD	3	<0.001	0	0	-

Analyte	N ^	Max. (µg/L)	N> Human Health SAC	N> Ecological SAC	Comments
Aldrin and dieldrin	3	<0.001	0	0	-
Chlordane	3	<0.001	0	0	-
Heptachlor	3	<0.001	0	0	-
TRH F1	3	<10	0	NSL	-
TRH F2	3	<50	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	-
Total Xylenes	3	<2	0	0	-
pH	3	7.2	0	0	-
EC	3	3,900	0	0	-

Notes:

^: Primary samples

N: Total number

NSL: No set limit

NL: Not limiting

8 DISCUSSION

8.1 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.

8.1.1 Soil

8.1.1.1 Heavy Metals

Nickel was encountered in the fill collected from BH1 and BH2 at concentrations that exceeded the ecological-based SAC during the PSI. The SAC exceedances are shown on Figure 3 attached in the appendices. It is noted that the PSI did not include any physiochemical analysis to derive the EIL and the SAC for nickel was overly conservative. The limited physiochemical analysis undertaken for the DSI resulted in a more appropriate EIL for nickel which demonstrates that the SAC exceedances reported during the PSI were not of concern and the nickel in soil does not pose an unacceptable risk.

It is also noted that there is only limited landscaping proposed for the development and there were no elevated nickel results (>SAC) in the landscape zones. Hence there is no complete SPR-linkage.

8.1.1.2 Hydrocarbons

TRH F3 concentrations exceeded the ecological-based SAC in two fill samples from BH112 and BH134. Interpretation of the TRH chromatographs for these fill samples indicated that the source of the TRHs is likely to be asphalt, rather than petroleum. We note that the TRH analytical method is a total recoverable hydrocarbon screening that does not differentiate between some TRH fractions associated with petroleum and other hydrocarbon compounds. Based on this, we consider that the source of the TRH F3 in the fill samples analysed to be from churned in asphalt fragments from the overlying AC pavement and/or ash inclusions in the fill matrix as there was no hydrocarbon odour or staining in the sample, or hydrocarbon sources nearby.

Further statistical analysis across all primary soil samples for TRH F3 indicated that the 95% UCL was below the ecological-based SAC of 300mg/kg. Along with the laboratory chromatographs and interpretation, the statistical analysis confirms that the TRH F3 ecological risk in soil at the site is low and acceptable and does not warrant remediation.

In the context of the proposed land use, BH112 and BH134 falls within the proposed basement/building footprint (see Figure 3). As the majority of the fill will be removed as part of the basement construction, there will be no complete SPR-linkages under the proposed development.

8.1.1.3 Asbestos

We note that sampling was completed from boreholes using a narrow diameter auger which limits the disturbance of soil, thus asbestos bulk quantification screening was not possible within selected boreholes. The fill material also contained inclusion of building rubble (concrete and tile fragments) at selected sampling locations, and potential sources of asbestos impacts to soils were identified in the historical documentation.

Although asbestos was not detected in any laboratory samples analysed for the PSI and DSI, nor was it observed in any of the bulk field screening samples, there is considered to be a potential for unexpected asbestos-related finds during excavation works. Such finds, particularly if they include localised impacts or low concentrations/amounts of asbestos, would not be readily identifiable until removal of the pavements.

Notwithstanding the above, the DSI/PSI has not identified any complete SPR linkages based on the available data.

Any unexpected asbestos-related finds may impact the waste classification for off-site disposal of waste, and may pose an occupational exposure risk to construction workers. An appropriate Unexpected Finds Protocol (UFP) should be developed and implemented for the proposed development and the waste classification process must include robust field screening processes to assess for asbestos.

8.1.1.4 Other CoPC in Soil

Elevated concentrations of the remaining CoPC were below the adopted SAC in the soil samples analysed during the DSI.

8.1.2 Groundwater

8.1.2.1 Heavy Metals

Heavy metals (copper, nickel and zinc) concentrations were encountered above the ecological-based SAC in all three monitoring wells (MW2, MW4 and MW6) during the PSI. Zinc concentrations in the groundwater sample collected from MW4 exceeded the ecological-based SAC during the DSI, however, the SAC exceedances for copper and nickel were not repeated which is likely due to better equilibration of the monitoring wells occurring over time since installation and the first sampling event.

The SAC exceedances are shown on Figure 3 attached in the appendices. The presence of zinc in groundwater is considered likely to be consistent with wider regional factors that are typical of an urbanised environment and the presence of zinc in groundwater is unlikely to pose an unacceptable risk to ecological receptors.

8.1.2.2 Pesticides

Imidacloprid concentrations in the groundwater samples collected from MW4 exceeded the ecological-based SAC. The SAC was based on a freshwater ecological system as defined in the *Canadian Water Quality Guidelines (2007)*. We note that there are no Australian guidance values currently in force for imidacloprid in water, although the proposed 95% freshwater aquatic ecosystem protection guidance value for imidacloprid presented in the Queensland Department of Environment and Science document *Water Quality* *and Investigations (2017) as amended (2018)*[21] is 0.11µg/L. However, we understand that the Australian guidance value is intended for pristine waterways rather than for moderately disturbed systems.

Available toxicological data suggest that imidacloprid is generally non-carcinogenic to humans. Although, the chemical displays acute and chronic toxicity for freshwater aquatic organisms and is soluble in water[22]. Based on this, the primary transport mechanism associated with imidacloprid is via the groundwater migrating to off-site water bodies, where there is a potential risk to ecological receptors.

MW4 was located adjacent to the onsite timber treatment area/chemical storeroom, where the imidacloprid based wood preservation compound was kept in 1,000L IBCs. There were no elevated imidacloprid concentrations detected (below PQL) in the groundwater samples collected from the other monitoring wells, which is expected considering the point source for this impact is in the down-gradient area of the site.

Considering the groundwater flow direction (i.e. to the north) and the location of MW4 which is at the northern end of the site, there is considered to be a potential for some off-site migration of the imidacloprid impact to occur via the groundwater. However, as the suspected source of the impact is relatively small-scale and localised, and considering the subsurface conditions are likely to be of relatively low permeability, there are no sensitive receptors nearby, and the downgradient water body at its nearest point is a concrete lined channel, we consider it unlikely that the imidacloprid concentration reported in MW4 poses an unacceptable risk to the receptors.

The timber treatment and chemical storage will cease to operate once the proposed development occurs, thus removing the imidacloprid source. The soil beneath the timber treatment/chemical store partly falls within the Basement Level 1 footprint and we anticipate that the majority of the soil will be removed as part of the proposed development, further reducing any residual imidacloprid risks which may be associated with the soil. Additionally, the imidacloprid concentrations in MW4 was only detected marginally above the Canadian ecological-based SAC and any off-site migration would be expected to be diluted by groundwater from areas not impacted, and thus reducing the concentrations moving away from the source zone. Based on these lines of evidence, we are of the opinion that the ecological risk associated with the localised imidacloprid concentrations detected in MW4 is low in the context of the proposed development, and risks should remain low provided groundwater is appropriately managed during the construction process. Recommendations have been made to reflect this.

Based on the PSI and DSI findings, we consider that remediation of groundwater is not required in the context of the proposed development, to render the site suitable for the intended use. However, the imidacloprid in groundwater should be managed and further monitored during the construction dewatering process via a robust DMP. The DMP must include provisions to further monitor/analyse for imidacloprid concentrations in groundwater so that the compound is not detected at unacceptable concentrations prior to any groundwater discharge of groundwater from the site.

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[21] Queensland Government Department of Environment and Science, (2018). *Proposed aquatic ecosystem protection guideline values for pesticides commonly used in the Great Barrier Reef catchment area: Part 1 – 2,4-D, Ametryn, Diuron, Glyphosate, Hexazinone, Imazapic, Imidacloprid, Isoxaflutole, Metolachlor, Metribuzin, Metsulfuron-methyl, Simazine and Tebuthiuron (as amended 2018)*

[22] USEPA, (2020). *Imidacloprid – Proposed Interim Registration Review Decision Case Number 7605*

8.1.2.3 Other CoPC in Groundwater

Elevated concentrations of the other CoPC were not encountered above the adopted SAC in the groundwater samples analysed and therefore unacceptable risks to the receptors have not been identified onsite to date.

8.2 Decision Statements

The decision statements are addressed below:

Are any results above the SAC?

Yes, as discussed in Section 8.1.

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

Based on the PSI and DSI data, potential risks associated with contamination are considered to be low in the context of the proposed land use. However, the insecticide imidacloprid in groundwater should be further monitored and managed as part of the construction dewatering process, via the DMP.

Is remediation required?

Triggers for remediation have not been identified at this stage.

Is the site characterisation sufficient to provide adequate confidence in the above decisions?

Yes.

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

The PSI and DSI have not identified any contamination risks that would preclude the proposed development of the site. We consider that the site is suitable for the proposed development as described in Section 1.1 of this report. The investigations have not identified any triggers for remediation in the context of the proposed use.

8.3 Data Gaps and Review of CSM

The CSM has been reviewed and we note the following:

- The site has been historically filled and the fill contained inclusions of anthropogenic material including concrete and tile fragments. Whilst the PSI and DSI have not identified asbestos at the sample locations, it is possible that asbestos may exist in the fill. This will need to be managed during the construction process via the implementation of a UFP so that potential occupational risks to workers remain low and acceptable;
- The soil and groundwater data indicate that impacts from the historical site uses (listed in the CSM table) is low;

- There were no evidence of extensive pesticide impacts in the soil from the historical agricultural land use of the site; and
- The groundwater data indicate that the imidacloprid impact from MW4 was localised and likely to have resulted from the onsite timber preservation activities.

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

Table 8-1: Data Gap Assessment

Data Gap	Assessment
Imidacloprid concentrations in groundwater assessment limited to one sampling event	There remains some uncertainty regarding the extent of the imidacloprid in groundwater, especially for areas further down-gradient (north) of MW4. Notwithstanding, risks were assessed to be low and potential risks during construction can be managed via the DMP.
Waste classification	A waste classification assessment will be required prior to the off-site disposal of soil for the proposed development. This is to occur following demolition and the waste classification assessment must include bulk field screening for asbestos as discussed in Section 8.1.1.3.

The data gaps did not adversely impact the assessment of site suitability and need for remediation, and can be routinely addressed as part of the construction phase of the project.

9 CONCLUSIONS AND RECOMMENDATIONS

The DSI included a review of the PSI, a site walkover inspection, soil sampling from 39 boreholes (BH101 to BH139 inclusive) and groundwater sampling from three existing groundwater monitoring wells (MW2, MW4 and MW6). The following potential sources of contamination/AEC were identified for the site:

- Fill material;
- Wood preservation activities;
- Historical agricultural use;
- Use of pesticides; and
- Hazardous building materials.

The DSI boreholes encountered fill materials to depths of approximately 0.16mGL to 2.2mBGL (through we note fill was generally identified to depths of less than 0.5mBGL). The deepest areas of fill (up to 2.2mBGL) were identified along the filled retaining wall section located within the north-eastern portion of the site. The fill contained inclusions of igneous and ironstone gravel, siltstone gravels and cobbles, sand, asphalt fragments, building rubble (concrete and tile fragments), plastic fragments, clay nodules, bark, slag, roots and root fibres.

A selection of soil and groundwater samples were analysed for the CoPC identified in the CSM. The following exceedances were reported for each media:

- Fill samples identified TRH F3 above the ecological-based SAC at two sampling locations; and
- Groundwater samples identified the insecticide imidacloprid marginally above the ecological-based SAC in one location.

Risks associated with soil and groundwater were assessed to be low in the context of the proposed land use and a trigger for remediation was not identified. On this basis, and subject to the implementation of the following recommendations, we are of the opinion that the site is suitable for the proposed development as outlined in Section 1.1 of this report:

- A robust UFP must be developed and implemented during the proposed development. The UFP must include specific procedures for managing unexpected contamination-related finds such as asbestos etc;
- The localised presence of insecticide imidacloprid in the groundwater in the northern end of the site must be managed appropriately during the construction process, via the DMP. Groundwater must not be discharged from the site without prior approval from the authorities/regulators, and not unless contaminant concentrations are demonstrated to be acceptable prior discharge; and
- A waste classification assessment is required prior to the off-site disposal of any waste. The waste classification process must include provisions for bulk (10L) field quantification screening for asbestos as part of the sampling plan.

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

10 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 have 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

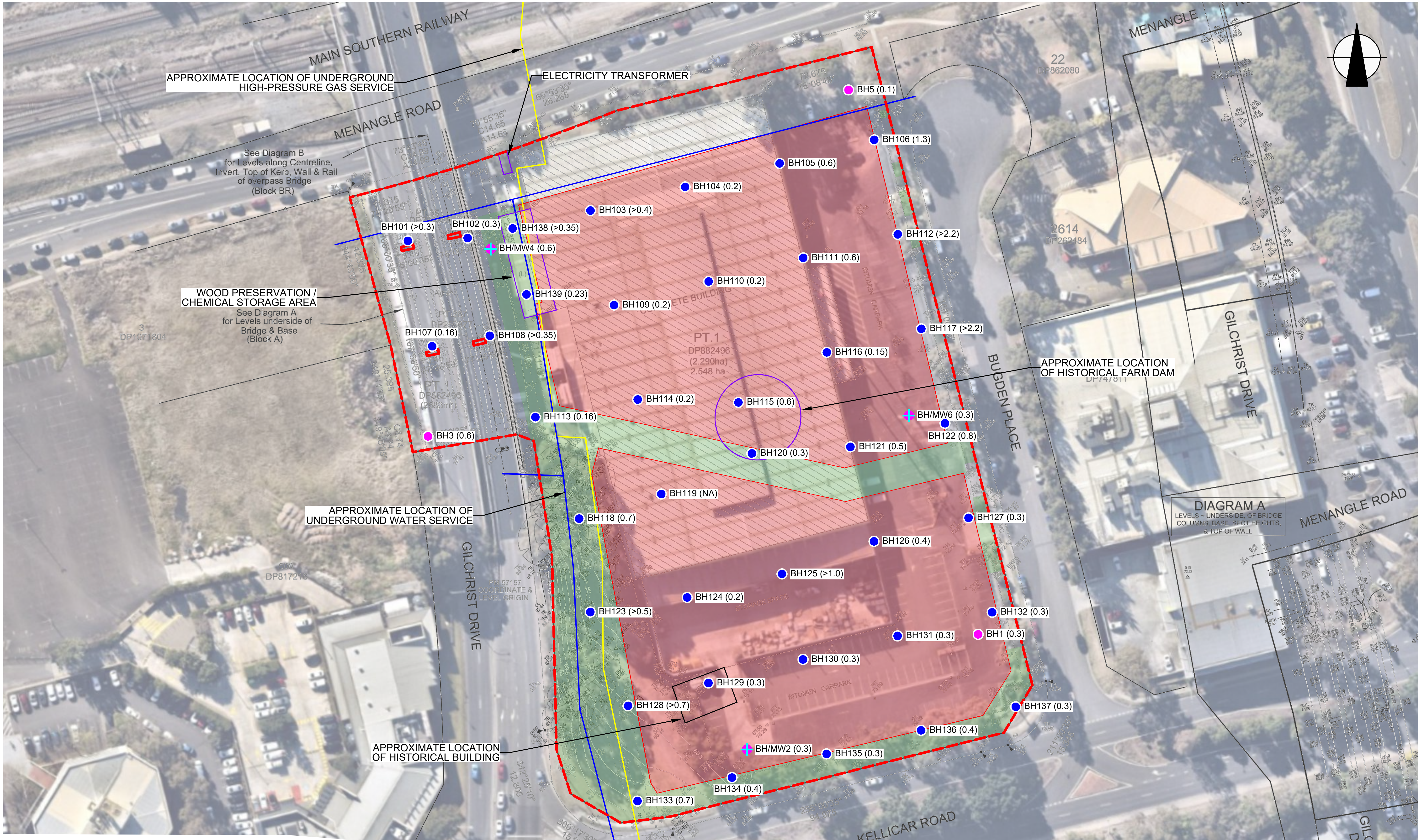
AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

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

Title:	**SITE LOCATION PLAN**
Location:	1 KELLICAR ROAD, CAMPBELLTOWN, NSW
Project No:	E36120PW
Figure No:	1

JKEnvironments

PLOT DATE: 21/08/2023 2:50:41 PM DWG FILE: K:\5C EIS JOBS\36000'S\E36120PW CAMPBELLTOWN\CAD\E36120PW.DWG



LEGEND

- APPROXIMATE SITE BOUNDARY
- BH(Fill Depth) — BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, PSI 2023)
- BH/MW(Fill Depth) — BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, PSI 2023)
- BH101 — BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKF, DSI 2024)
- APPROXIMATE PROPOSED BASEMENT LEVEL 1 FOOTPRINT
- APPROXIMATE DEEP SOIL ZONES

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

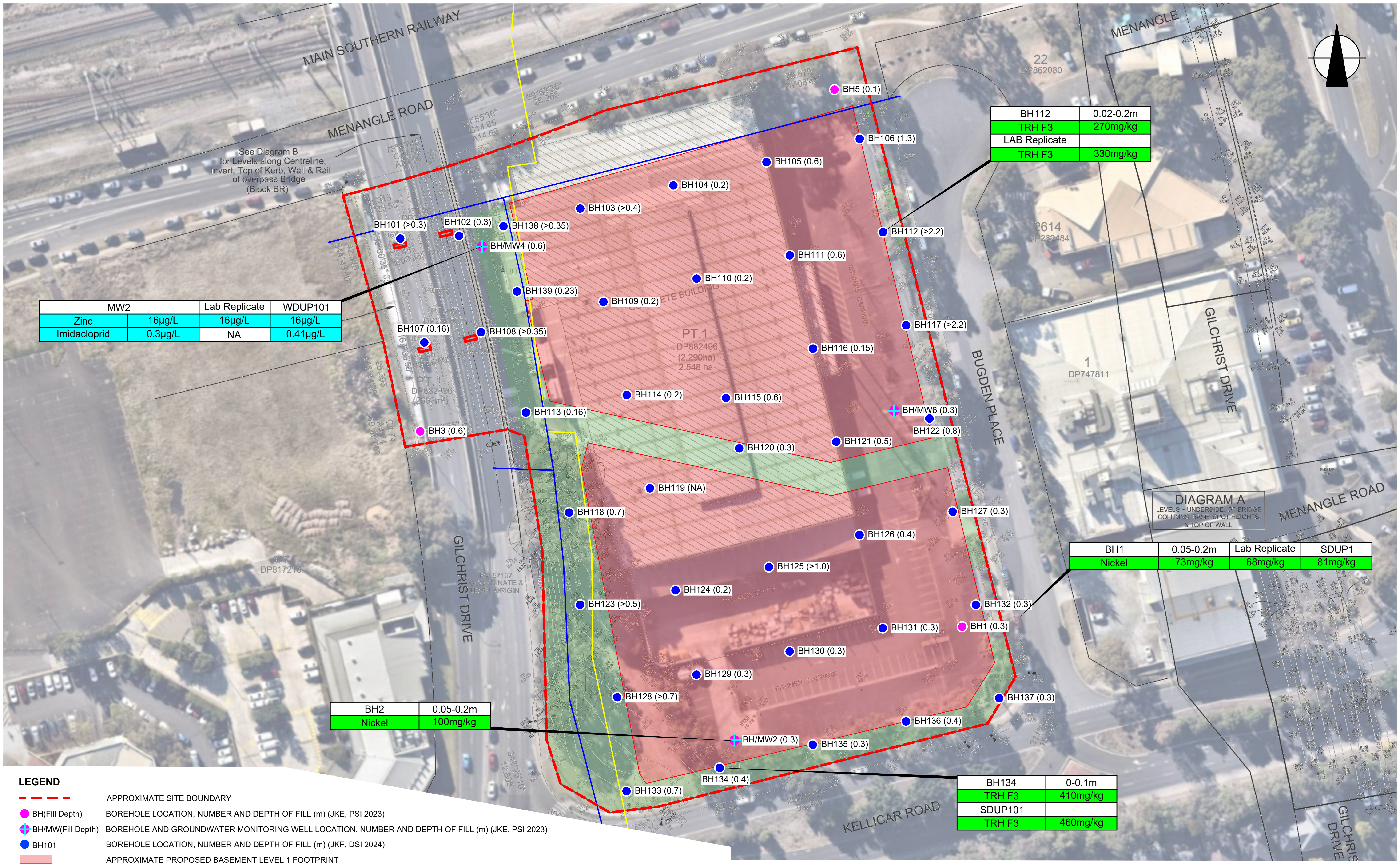
SCALE 0 10 20 30 40 50 METRES 1:1000 @A3

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

Title:	SAMPLE LOCATION PLAN
Location:	1 KELLICAR ROAD, CAMPBELLTOWN, NSW
Project No:	E36120PW
Figure No:	2

JKEnvironments

PLOT DATE: 19/07/2024 10:04:54 AM DWG FILE: K:\5C EIS JOBS\36000'S\E36120PW CAMPBELLTOWN\CAD\E36120PW.DWG



BH112	0.02-0.2m
TRH F3	270mg/kg
LAB Replicate	
TRH F3	330mg/kg

MW2		Lab Replicate	WDUP101
Zinc	16µg/L	16µg/L	16µg/L
Imidacloprid	0.3µg/L	NA	0.41µg/L

BH1	0.05-0.2m	Lab Replicate	SDUP1
Nickel	73mg/kg	68mg/kg	81mg/kg

BH2	0.05-0.2m
Nickel	100mg/kg

BH134	0-0.1m
TRH F3	410mg/kg
SDUP101	
TRH F3	460mg/kg

LEGEND

- APPROXIMATE SITE BOUNDARY
- BH(Fill Depth) — BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, PSI 2023)
- BH/MW(Fill Depth) — BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, PSI 2023)
- BH101 — BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKF, DSI 2024)
- APPROXIMATE PROPOSED BASEMENT LEVEL 1 FOOTPRINT
- APPROXIMATE DEEP SOIL ZONES
- 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 ECOLOGICAL RISK
- GROUNDWATER CONTAMINATION ABOVE SAC

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

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

Title: **SAC EXCEEDANCE PLAN**

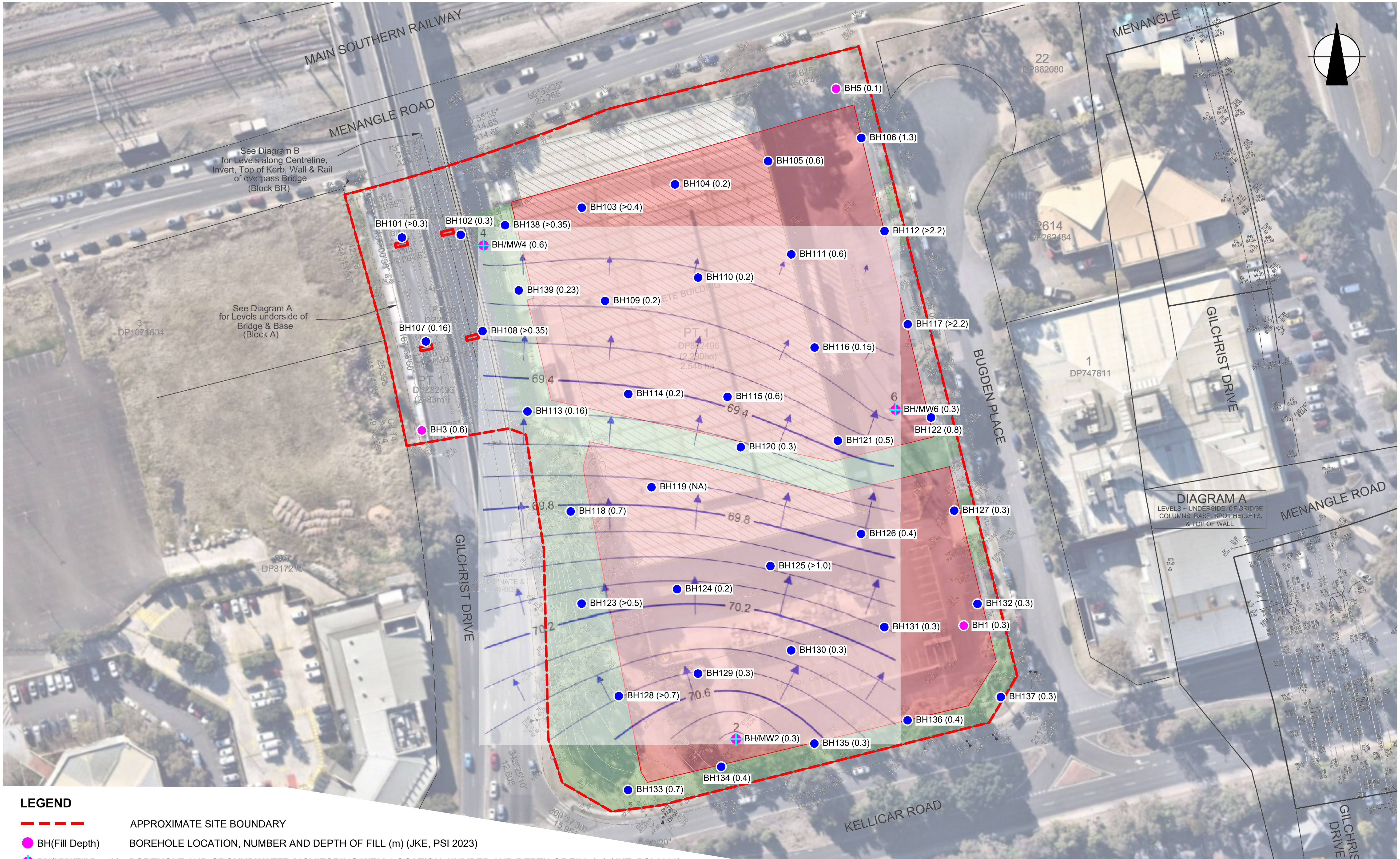
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Project No: E36120PW

Figure No: 3

JKEnvironments

PLOT DATE: 19/07/2024 10:06:26 AM DWG FILE: K:\5C EIS JOBS\36000'S\E36120PW CAMPBELLTOWN\CADE36120PW.DWG



LEGEND

- - -	APPROXIMATE SITE BOUNDARY
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, PSI 2023)
BH/MW(Fill Depth)	BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m) (JKE, PSI 2023)
BH101	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m) (JKF, DSI 2024)
	APPROXIMATE PROPOSED BASEMENT LEVEL 1 FOOTPRINT
	APPROXIMATE DEEP SOIL ZONES
70.5	GROUNDWATER CONTOUR INTERVALS (m)
→	INFERRED GROUNDWATER FLOW DIRECTION

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

0 10 20 30 40 50
SCALE 1:1000 @A3 METRES

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

Title: **GROUNDWATER CONTOUR PLOT**

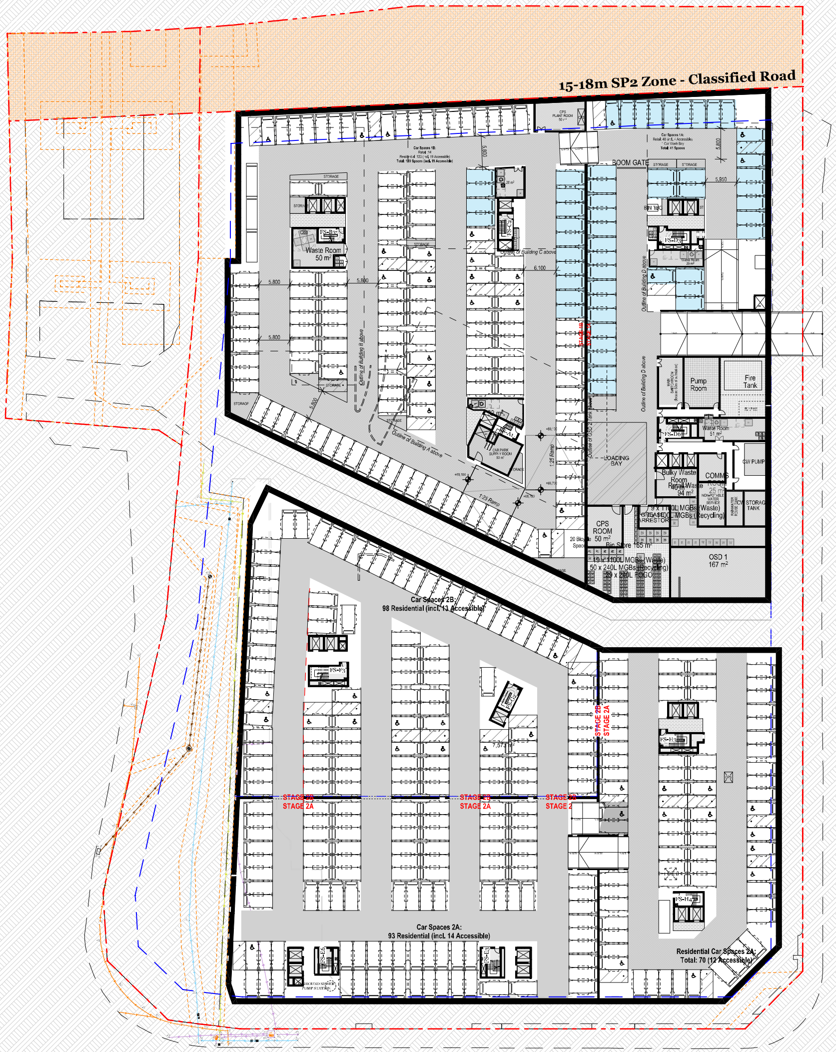
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Project No: E36120PW | Figure No: 4

JKEnvironments

PLOT DATE: 15/07/2024 12:57:55 PM DWG FILE: K:\5C EIS JOBS\36000'S\E36120PW CAMPBELLTOWN\CAD\E36120PW.DWG

Appendix B: Selected Proposed Development Plans



Basement 1
1:500

DEVELOPMENT APPLICATION

Detailed Architectural Plans refer to DA200 Series

NOT FOR CONSTRUCTION

Consultants

Land Survey:	Planner:	Landscape Design:	BCA:	Access:	Traffic:	Structural Engineer:	Building Services:	Fire Engineer:	Waste Mnagement:	Basix:	Stormwater Management:	Geo-tech Engineer:	Arborist:	Wind:
Burton & Field	**Think Planners**	**Oculus**	**BM+G**	**BM+G**	**JMT Consulting**	**ADP**	**ADP**	**ADP**	**Elephants Foot**	**ADP**	**ADP**	**JK Environments**	**HMS**	**RWDI**
Steven Sampson	Adam Byrnes	Gareth Feng	Brian Maguire	Brian Maguire	Josh Milston	Jon Shally	Jon Shally	Jon Shally	Hannah Wilkes	Jon Shally	Jon Shally	Brendan Page	Scott Freeman	Henry Kuo
(02) 9602 1199	0419 288 899	(02) 9557 5533	0417 423 418	0417 423 418	0415 563 177	0433 044 741	0433 044 741	0433 044 741	(02) 9780 3578	0433 044 741	0433 044 741	0424 193 922	0425 308 275	8000 9856

Rev	Date	By	Check	Rev Name
A	1/09/2023	MW XD KHS	NB XD	Development Application
B	3/05/2024	DK CR	NB XD	Revised DA

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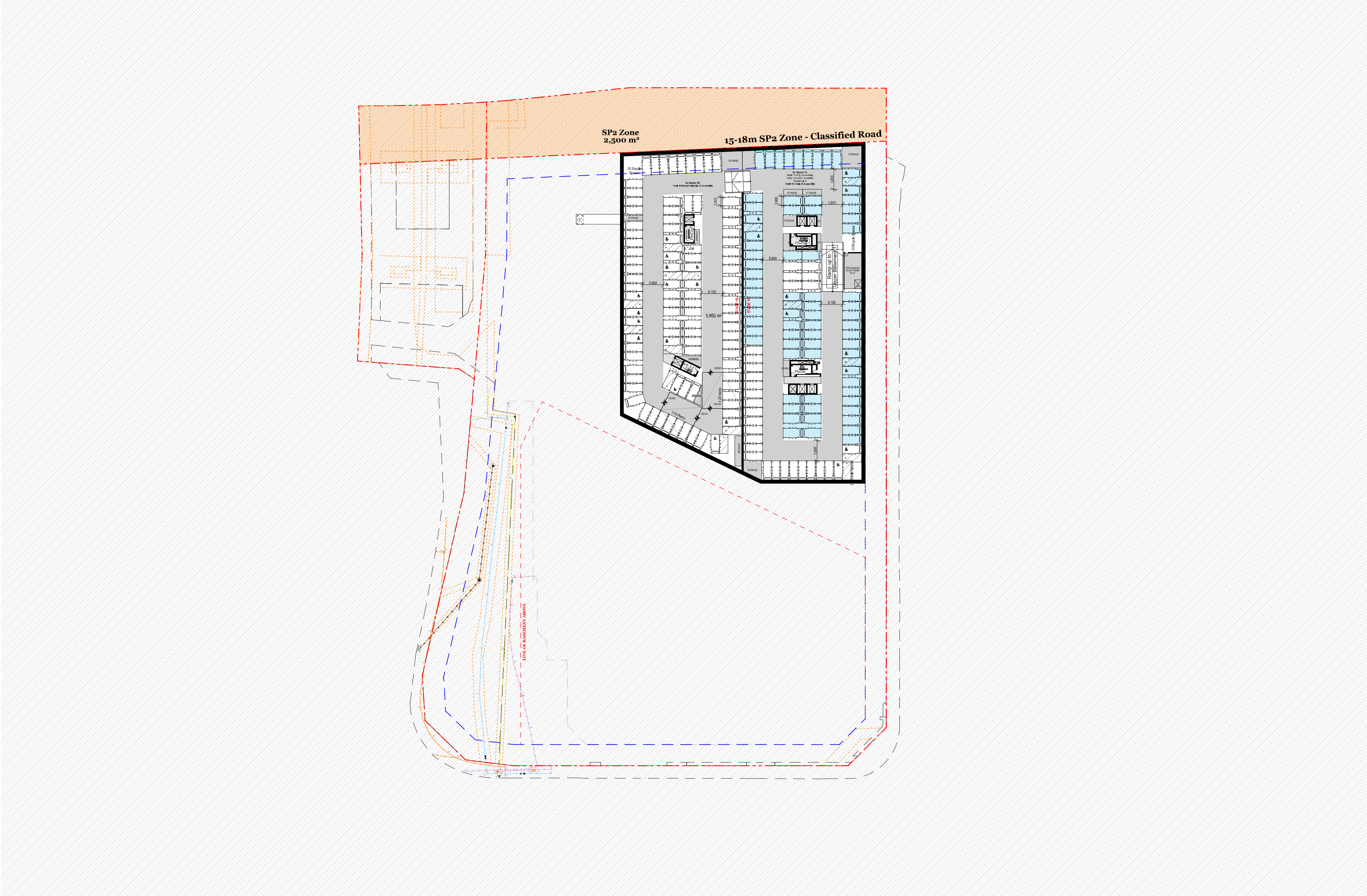
Koos de Keijzer 5767
David Randerson 8542

DKO

Project Name	1 Kellicar Road
Project Address	1 Kellicar Road, Campbelltown, NSW 2560
Client	AV Jennings
Project Number	132332
Drawing Name	Basement 1 Plan
Scale	1:500 @ A1
Date	3/05/2024
Drawing Number	DA203
Revision	B



Basement 2
1:500

DEVELOPMENT APPLICATION

Detailed Architectural Plans refer to DA200 Series

NOT FOR CONSTRUCTION

Consultants

Role	Firm	Contact	Phone
Land Survey:	Burton & Field	Steven Sampson	(02) 9602 1199
Planner:	Think Planners	Adam Byrnes	0419 288 899
Landscape Design:	Oculus	Gareth Feng	(02) 9557 5533
BCA:	BM+G	Brian Maguire	0417 423 418
Access:	BM+G	Brian Maguire	0417 423 418
Traffic:	JMT Consulting	Josh Milston	0415 563 177
Structural Engineer:	ADP	Jon Shally	0433 044 741
Building Services:	ADP	Jon Shally	0433 044 741
Fire Engineer:	ADP	Jon Shally	0433 044 741
Waste Mnagement:	Elephants Foot	Hannah Wilkes	(02) 9780 3578
Basix:	ADP	Jon Shally	0433 044 741
Stormwater Management:	ADP	Jon Shally	0433 044 741
Geo-tech Engineer:	JK Environments	Brendan Page	0424 193 922
Arborist:	HMS	Scott Freeman	0425 308 275
Wind:	RWDI	Henry Kuo	8000 9856

Printed: 03/05/2024 10:50 AM

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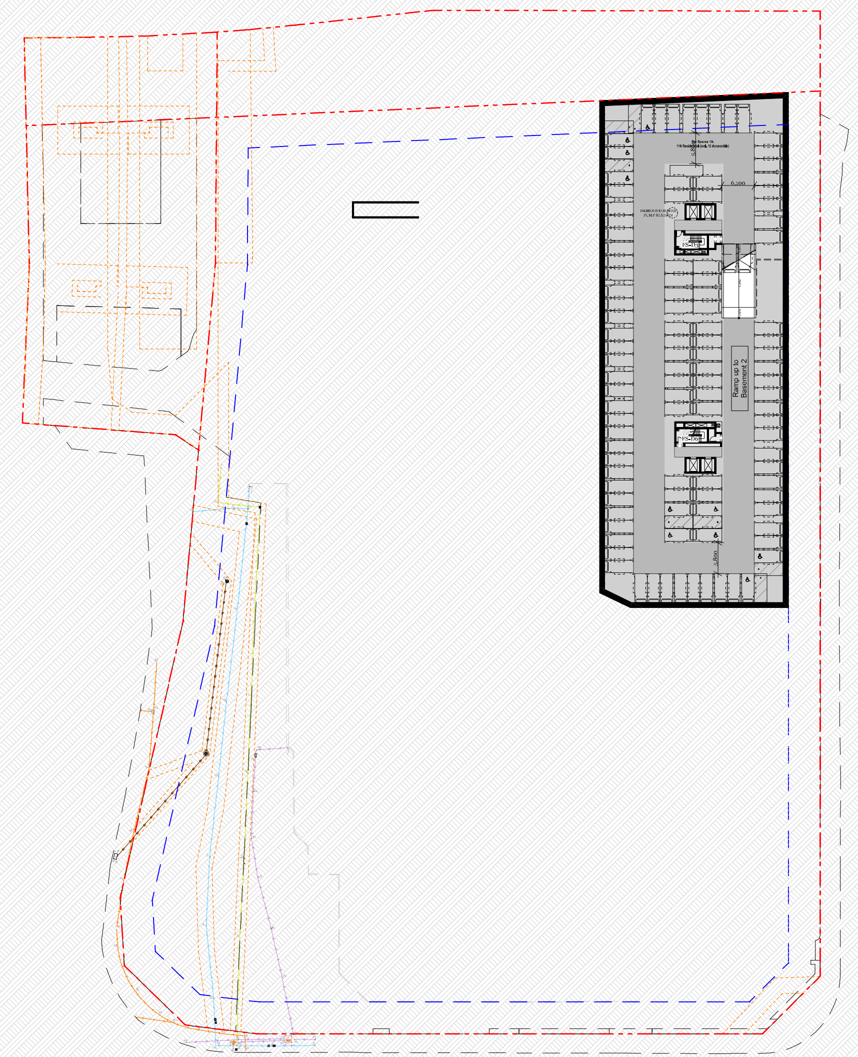
Project Name	1 Kellicar Road
Project Address	1 Kellicar Road, Campbelltown, NSW 2560
Client	AV Jennings
Project Number	132332
Drawing Name	Basement 2 Plan
Scale	1:500 @ A1
Date	3/05/2024
Drawing Number	DA202
Revision	B



Basement 3
1:500

DEVELOPMENT APPLICATION

Detailed Architectural Plans refer to DA200 Series

NOT FOR CONSTRUCTION

Consultants

Role	Firm	Contact	Phone
Land Survey:	Burton & Field	Steven Sampson	(02) 9602 1199
Planner:	Think Planners	Adam Byrnes	0419 288 899
Landscape Design:	Oculus	Gareth Feng	(02) 9557 5533
BCA:	BM+G	Brian Maguire	0417 423 418
Access:	BM+G	Brian Maguire	0417 423 418
Traffic:	JMT Consulting	Josh Milston	0415 563 177
Structural Engineer:	ADP	Jon Shally	0433 044 741
Building Services:	ADP	Jon Shally	0433 044 741
Fire Engineer:	ADP	Jon Shally	0433 044 741
Waste Mnagement:	Elephants Foot	Hannah Wilkes	(02) 9780 3578
Basix:	ADP	Jon Shally	0433 044 741
Stormwater Management:	ADP	Jon Shally	0433 044 741
Geo-tech Engineer:	JK Environments	Brendan Page	0424 193 922
Arborist:	HMS	Scott Freeman	0425 308 275
Wind:	RWDI	Henry Kuo	8000 9856

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Project Name	1 Kellicar Road
Project Address	1 Kellicar Road, Campbelltown, NSW 2560
Client	AV Jennings
Project Number	132332
Drawing Name	Basement 3 Plan
Scale	1:500 @ A1
Date	3/05/2024
Drawing Number	DA201
Revision	B

Deep Soil

Deep Soil Zone	
	Area m2
Deep Soil	4,231 (18.4%)

Site Area 22,991

ADG Compliance 1,609 m2 (7%) ✓

DCP Compliance 3,449 m2 (15%) ✓

Key

Deep Soil

DEVELOPMENT APPLICATION

NOT FOR CONSTRUCTION

Consultants

Role	Firm	Contact	Phone
Land Survey:	Burton & Field	Steven Sampson	(02) 9602 1199
Planner:	Think Planners	Adam Byrnes	0419 288 899
Landscape Design:	Oculus	Gareth Feng	(02) 9557 5533
BCA:	BM+G	Brian Maguire	0417 423 418
Access:	BM+G	Brian Maguire	0417 423 418
Traffic:	JMT Consulting	Josh Milston	0415 563 177
Structural Engineer:	ADP	Jon Shally	0433 044 741
Building Services:	ADP	Jon Shally	0433 044 741
Fire Engineer:	ADP	Jon Shally	0433 044 741
Waste Mnagement:	Elephants Foot	Hannah Wilkes	(02) 9780 3578
Basix:	ADP	Jon Shally	0433 044 741
Stormwater Management:	ADP	Jon Shally	0433 044 741
Geo-tech Engineer:	JK Environments	Brendan Page	0424 193 922
Arborist:	HMS	Scott Freeman	0425 308 275
Wind:	RWDI	Henry Kuo	8000 9856

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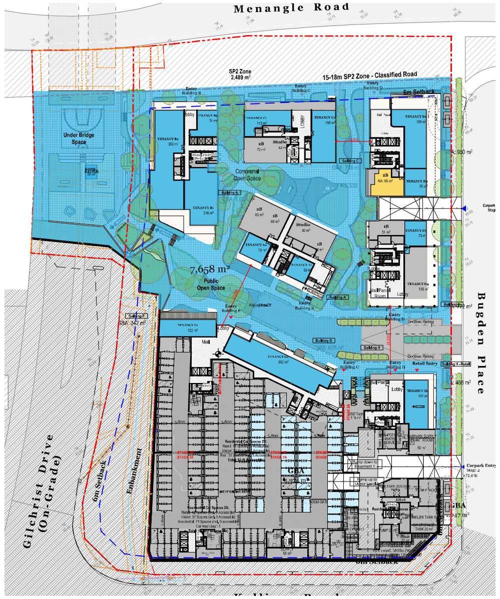
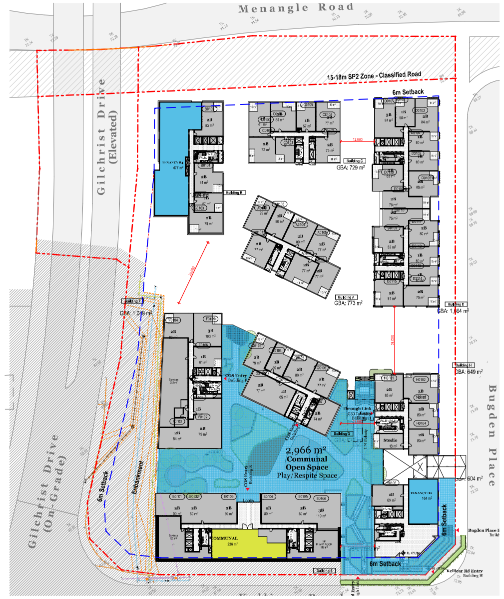
Project Name	1 Kellicar Road
Project Address	1 Kellicar Road, Campbelltown, NSW 2560
Client	AV Jennings
Project Number	132332
Drawing Name	Deep Soil
Scale	1:500 @ A1
Date	3/05/2024
Drawing Number	DA606
Revision	B

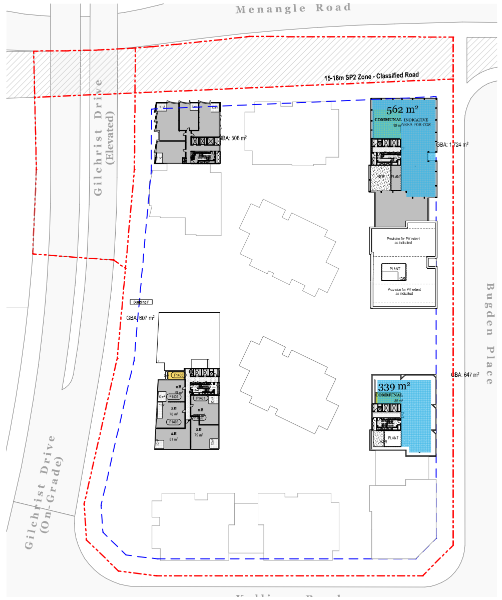


Level 0



Level 1

Level 2



Level 14

Landscape Area	
Level	**Area m2**
Level 0	7,658
Level 1	2,966
Level 2	1,592
Level 14	901
	13,117 m²

Key

Landscape Area

DEVELOPMENT APPLICATION

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Consultants

Land Survey:	Planner:	Landscape Design:	BCA:	Access:	Traffic:	Structural Engineer:	Building Services:	Fire Engineer:	Waste Mnagement:	Basix:	Stormwater Management:	Geo-tech Engineer:	Arborist:	Wind:
Burton & Field	**Think Planners**	**Oculus**	**BM+G**	**BM+G**	**JMT Consulting**	**ADP**	**ADP**	**ADP**	**Elephants Foot**	**ADP**	**ADP**	**JK Environments**	**HMS**	**RWDI**
Steven Sampson	Adam Byrnes	Gareth Feng	Brian Maguire	Brian Maguire	Josh Milston	Jon Shally	Jon Shally	Jon Shally	Hannah Wilkes	Jon Shally	Jon Shally	Brendan Page	Scott Freeman	Henry Kuo
(02) 9602 1199	0419 288 899	(02) 9557 5533	0417 423 418	0417 423 418	0415 563 177	0433 044 741	0433 044 741	0433 044 741	(02) 9780 3578	0433 044 741	0433 044 741	0424 193 922	0425 308 275	8000 9856

Rev	Date	By	Check	Rev Name
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B	3/05/2024	DK CR	NB XD	Revised DA

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Project Name	1 Kellicar Road	Project Number	132332
Project Address	1 Kellicar Road, Campbelltown, NSW 2560	Drawing Name	Landscape Area
		Scale	@ A1
		Date	3/05/2024
Client	AV Jennings	Drawing Number	DA607
		Revision	B

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
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
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
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
PQL:	Practical Quantitation Limit
RS:	Rinsate Sample
SAC:	Site Assessment Criteria
SSA:	Site Specific Assessment
TB:	Trip Blank
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
UCL:	Upper Level Confidence Limit on Mean Value
USEPA	United States Environmental Protection Agency
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 Version 5.1 (USEPA).

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).

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.

JKEnvironments

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-B: 'Residential with minimal opportunities for soil access; including dwellings with fully/permanently paved yards like high-rise buildings'

			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)		
All data in mg/kg unless stated otherwise			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos	TOTAL PCBs	ASBESTOS FIBRES
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	100
Site Assessment Criteria (SAC)			500	150	500	30000	1200	120	1200	60000	400	4	15	400	500	10	90	600	10	340	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH101	0.16-0.3	Fill: Silty Gravelly Clay	**12**	<0.4	**8**	**43**	**19**	<0.1	**19**	**77**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH101 - Lab replicate	0.16-0.3	Fill: Silty Gravelly Clay	**10**	<0.4	**8**	**34**	**17**	<0.1	**17**	**64**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH102	0.18-0.3	Fill: Silty Clay	**7**	<0.4	**17**	**42**	**9**	<0.1	**71**	**43**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH102	0.3-0.5	Silty Clay	**14**	<0.4	**13**	**31**	**14**	**0.1**	**20**	**36**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH103	0.22-0.4	Fill: Silty Clay	**12**	<0.4	**12**	**59**	**23**	<0.1	**17**	**70**	**0.4**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH104	0.2-0.4	Siltstone	**7**	<0.4	**6**	**24**	**16**	<0.1	**8**	**44**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH105	0.08-0.2	Fill: Gravelly Sand	<4	<0.4	**16**	**81**	**8**	<0.1	**85**	**46**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH106	0.04-0.2	Fill: Gravelly Sand	<4	<0.4	**13**	**59**	**3**	<0.1	**93**	**86**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH106	1.3-1.5	Silty Clay	**5**	<0.4	**7**	**15**	**6**	<0.1	**11**	**39**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH107	0.16-0.3	Siltstone	<4	<0.4	**3**	**23**	**9**	<0.1	**3**	**28**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH108	0.16-0.3	Fill: Silty Clay	**11**	<0.4	**8**	**43**	**19**	<0.1	**14**	**72**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH109	0.15-0.2	Fill: Clayey Sand	<4	<0.4	**10**	**18**	**6**	<0.1	**4**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH110	0.15-0.2	Fill: Clayey Sand	<4	<0.4	**9**	**27**	**6**	<0.1	**4**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH111	0.02-0.3	Fill: Gravelly Sand	<4	<0.4	**13**	**52**	<1	<0.1	**100**	**41**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH112	0.02-0.2	Fill: Gravelly Sand	<4	<0.4	**14**	**55**	**2**	<0.1	**77**	**33**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH112 - Lab replicate	0.02-0.2	Fill: Gravelly Sand	<4	<0.4	**13**	**78**	**2**	<0.1	**79**	**35**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH112	1.0-1.4	Fill: Silty Clay	**6**	<0.4	**7**	**9**	**7**	<0.1	**2**	**8**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH113	0.16-0.25	Siltstone	**11**	<0.4	**8**	**47**	**17**	<0.1	**26**	**83**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH114	0.15-0.2	Fill: Clayey Sand	<4	<0.4	**11**	**24**	**6**	<0.1	**4**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH115	0.14-0.4	Fill: Silty Clay	**8**	<0.4	**8**	**24**	**10**	<0.1	**5**	**31**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH115	0.6-0.9	Siltstone	**11**	<0.4	**5**	**24**	**9**	<0.1	**4**	**30**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH116	0.01-0.15	Fill: Gravelly Sand	<4	<0.4	**14**	**55**	<1	<0.1	**94**	**39**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH117	0.03-0.2	Fill: Gravelly Sand	<4	<0.4	**15**	**55**	<1	<0.1	**92**	**40**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH117	1.1-1.4	Fill: Silty Clay	**8**	<0.4	**13**	**26**	**16**	<0.1	**12**	**47**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH118	0-0.1	Fill: Silty Clay	**12**	<0.4	**11**	**45**	**62**	<0.1	**14**	**98**	**3.1**	**0.6**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH119	0.2-0.4	Siltstone	**10**	<0.4	**9**	**43**	**17**	<0.1	**25**	**81**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH119 - Lab replicate	0.2-0.4	Siltstone	**9**	<0.4	**10**	**40**	**16**	<0.1	**30**	**83**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH120	0.12-0.2	Fill: Clayey Sand	<4	<0.4	**9**	**31**	**5**	<0.1	**5**	**14**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH120	0.2-0.3	Fill: Silty Clay	**7**	<0.4	**5**	**20**	**35**	<0.1	**6**	**26**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH121	0.02-0.2	Fill: Gravelly Sand	<4	<0.4	**10**	**41**	**2**	<0.1	**75**	**32**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH122	0.03-0.2	Fill: Gravelly Sand	<4	<0.4	**11**	**62**	**6**	<0.1	**70**	**40**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH123	0-0.1	Fill: Silty Clay	**7**	<0.4	**10**	**26**	**20**	<0.1	**8**	**93**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH124	0.19-0.25	Fill: Silty Sand	**6**	<0.4	**11**	**41**	**25**	<0.1	**11**	**52**	**0.4**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH125	0.17-0.3	Fill: Silty Sand	**4**	<0.4	**18**	**31**	**18**	<0.1	**23**	**39**	**2.3**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH126	0.05-0.4	Fill: Clayey Sand	<4	<0.4	**9**	**7**	**12**	<0.1	**6**	**25**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH127	0-0.1	Fill: Silty Sand	**5**	<0.4	**11**	**30**	**16**	<0.1	**23**	**170**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH128	0-0.1	Fill: Silty Sand	**8**	<0.4	**15**	**33**	**20**	<0.1	**21**	**54**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH129	0.08-0.3	Fill: Silty Sand	<4	<0.4	**14**	**38**	**23**	<0.1	**35**	**55**	**4.9**	**0.8**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH130	0.1-0.3	Fill: Silty Sand	<4	<0.4	**17**	**33**	**17**	<0.1	**31**	**42**	**1**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH130	0.4-0.7	SIltstone	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH131	0.06-0.3	Fill: Silty Sand	<4	<0.4	**9**	**11**	**12**	<0.1	**14**	**22**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH131 - Lab replicate	0.06-0.3	Fill: Silty Sand	<4	<0.4	**9**	**8**	**12**	<0.1	**10**	**21**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH131	0.5-0.7	Siltstone	**5**	<0.4	**6**	**50**	**24**	<0.1	**10**	**95**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH132	0.03-0.2	Fill: Silty Sand	<4	<0.4	**14**	**51**	<1	<0.1	**89**	**37**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH132	0.2-0.3	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Not Detected
BH133	0-0.1	Fill: Silty Sand	**7**	<0.4	**9**	**19**	**26**	<0.1	**7**	**56**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH133	0.7-0.75	Silty Clay	**14**	<0.4	**30**	**21**	**16**	<0.1	**17**	**30**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH134	0-0.1	Fill: Silty Sand	**5**	<0.4	**10**	**28**	**18**	<0.1	**12**	**92**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH135	0.04-0.3	Fill: Silty Clay	**11**	<0.4	**10**	**39**	**21**	<0.1	**14**	**68**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH136	0-0.1	Fill: Silty Clay	**5**	<0.4	**11**	**18**	**23**	<0.1	**9**	**59**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH137	0.03-0.3	Fill: Silty Sand	<4	<0.4	**19**	**28**	**18**	<0.1	**21**	**59**	**1.7**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH137 - Lab replicate	0.03-0.3	Fill: Silty Sand	<4	<0.4	**15**	**39**	**19**	<0.1	**20**	**53**	**2.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH138	0.18-0.3	Fill: Silty Clay	**9**	<0.4	**14**	**28**	**14**	**0.1**	**18**	**41**	**0.5**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA
BH139	0.18-0.23	Fill: Silty Sand	<4	<0.4	**7**	**62**	**4**	<0.1	**8**	**19**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA	NA
SDUP101	0-0.1	Fill: Silty Sand	**6**	<0.4	**12**	**30**	**19**	<0.1	**14**	**110**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP102	0-0.1	Fill: Silty Clay	**7**	<0.4	**16**	**24**	**24**	<0.1	**17**	**63**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP103	0-0.1	Fill: Silty Sand	**6**	<0.4	**13**	**42**	**21**	<0.1	**32**	**200**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP104	0-0.1	Fill: Silty Clay	**8.5**	<0.4	**9.1**	**26**	**38**	<0.1	**9.6**	**59**	**1.8**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	**10.4**	<0.4	**11.6**	**30.6**	**41.4**	<0.1	**11.3**	**70.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA	NA
SDUP105	0-0.1	Fill: Silty Clay	**6.2**	<0.4	**8.5**	**26**	**15**	**0.14**	**6.8**	**52**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP106	0-0.1	Fill: Silty Sand	**7.9**	<0.4	**9.6**	**32**	**20**	<0.1	**22**	**60**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
Total Number of Samples			59	59	59	59	59	60	59	59	58	58	54	54	54	54	54	54	54	52	51	31
Maximum Value			14	<PQL	30	81	62	0.14	100	200	4.9	0.8	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Not Detected

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

JKEnvironments

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	0.16-0.3	Fill: Silty Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
BH101 - Lab replicate	0.16-0.3	Fill: Silty Gravelly Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
BH102	0.18-0.3	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH102	0.3-0.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.4
BH103	0.22-0.4	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
BH104	0.2-0.4	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
BH105	0.08-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
BH106	0.04-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
BH106	1.3-1.5	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
BH107	0.16-0.3	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH108	0.16-0.3	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH109	0.15-0.2	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.9
BH110	0.15-0.2	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
BH111	0.02-0.3	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.9
BH112	0.02-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
BH112 - Lab replicate	0.02-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2
BH112	1.0-1.4	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	3.4
BH113	0.16-0.25	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.6
BH114	0.15-0.2	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.1
BH115	0.14-0.4	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
BH115	0.6-0.9	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH116	0.01-0.15	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.9
BH117	0.03-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.7
BH117	1.1-1.4	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	2.5
BH118	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1.5
BH119	0.2-0.4	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH119 - Lab replicate	0.2-0.4	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH120	0.12-0.2	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH120	0.2-0.3	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.2
BH121	0.02-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
BH122	0.03-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.7
BH123	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	1
BH124	0.19-0.25	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH125	0.17-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.7
BH126	0.05-0.4	Fill: Clayey Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.8
BH127	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH128	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH129	0.08-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH130	0.1-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH131	0.06-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH131 - Lab replicate	0.06-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.4
BH131	0.5-0.7	Siltstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH132	0.03-0.2	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH133	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.9
BH133	0.7-0.75	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH134	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH135	0.04-0.3	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.6
BH136	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH137	0.03-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.14
BH137 - Lab replicate	0.03-0.3	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.14
SDUP101	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	**50**	<0.2	<0.5	<1	<1	<1	NA
SDUP102	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP103	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP104	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<3	NA
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	NA	<0.2	<0.5	<1	<1	<3	NA
SDUP105	0-0.1	Fill: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<3	NA
SDUP106	0-0.1	Fill: Silty Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<3	NA
Total Number of Samples					57	56	57	57	57	57	57	51
Maximum Value					<PQL	50	<PQL	<PQL	<PQL	<PQL	<PQL	3.4

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	0.16-0.3	Fill: Silty Gravelly Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH101 - Lab replicate	0.16-0.3	Fill: Silty Gravelly Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH102	0.18-0.3	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH102	0.3-0.5	Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH103	0.22-0.4	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH104	0.2-0.4	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH105	0.08-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH106	0.04-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH106	1.3-1.5	Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH107	0.16-0.3	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH108	0.16-0.3	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH109	0.15-0.2	Fill: Clayey Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH110	0.15-0.2	Fill: Clayey Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH111	0.02-0.3	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH112	0.02-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH112 - Lab replicate	0.02-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH112	1.0-1.4	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH113	0.16-0.25	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH114	0.15-0.2	Fill: Clayey Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH115	0.14-0.4	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH115	0.6-0.9	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH116	0.01-0.15	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH117	0.03-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH117	1.1-1.4	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH118	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH119	0.2-0.4	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH119 - Lab replicate	0.2-0.4	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH120	0.12-0.2	Fill: Clayey Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH120	0.2-0.3	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH121	0.02-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH122	0.03-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH123	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH124	0.19-0.25	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH125	0.17-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH126	0.05-0.4	Fill: Clayey Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH127	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH128	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH129	0.08-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH130	0.1-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH131	0.06-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH131 - Lab replicate	0.06-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH131	0.5-0.7	Siltstone	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH132	0.03-0.2	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH133	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH133	0.7-0.75	Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH134	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH135	0.04-0.3	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH136	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH137	0.03-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH137 - Lab replicate	0.03-0.3	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH139	0.18-0.23	Fill: Silty Sand	0m to <1m	Sand	NA	NA	NA	NA	NA	NA	NA
SDUP101	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP102	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP103	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP104	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NA	3	NL	NL	230	NL
SDUP105	0-0.1	Fill: Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP106	0-0.1	Fill: Silty Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL

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			**RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH101	0.16-0.3	Fine	<25	<50	<100	<100
BH101 - Lab replicate	0.16-0.3	Fine	<25	<50	<100	<100
BH102	0.18-0.3	Fine	<25	<50	<100	<100
BH102	0.3-0.5	Fine	<25	<50	<100	<100
BH103	0.22-0.4	Fine	<25	<50	<100	<100
BH104	0.2-0.4	Fine	<25	<50	<100	<100
BH105	0.08-0.2	Coarse	<25	<50	**200**	**400**
BH106	0.04-0.2	Coarse	<25	<50	**180**	**330**
BH106	1.3-1.5	Fine	<25	<50	<100	<100
BH107	0.16-0.3	Fine	<25	<50	<100	<100
BH108	0.16-0.3	Fine	<25	<50	<100	<100
BH109	0.15-0.2	Coarse	<25	<50	<100	<100
BH110	0.15-0.2	Coarse	<25	<50	<100	<100
BH111	0.02-0.3	Coarse	<25	<50	<100	<100
BH112	0.02-0.2	Coarse	<25	<50	**270**	**450**
BH112 - Lab replicate	0.02-0.2	Coarse	<25	<50	**330**	**540**
BH112	1.0-1.4	Fine	<25	<50	<100	<100
BH113	0.16-0.25	Fine	<25	<50	<100	<100
BH114	0.15-0.2	Coarse	<25	<50	<100	<100
BH115	0.14-0.4	Fine	<25	<50	<100	<100
BH115	0.6-0.9	Fine	<25	<50	<100	<100
BH116	0.01-0.15	Coarse	<25	<50	<100	<100
BH117	0.03-0.2	Coarse	<25	<50	**170**	**260**
BH117	1.1-1.4	Fine	<25	<50	<100	<100
BH118	0-0.1	Fine	<25	<50	<100	<100
BH119	0.2-0.4	Fine	<25	<50	<100	<100
BH119 - Lab replicate	0.2-0.4	Fine	<25	<50	<100	<100
BH120	0.12-0.2	Coarse	<25	<50	<100	<100
BH120	0.2-0.3	Fine	<25	<50	<100	<100
BH121	0.02-0.2	Coarse	<25	<50	<100	<100
BH122	0.03-0.2	Coarse	<25	<50	**150**	**230**
BH123	0-0.1	Fine	<25	<50	**260**	<100
BH124	0.19-0.25	Coarse	<25	<50	<100	<100
BH125	0.17-0.3	Coarse	<25	<50	<100	<100
BH126	0.05-0.4	Coarse	<25	<50	<100	<100
BH127	0-0.1	Coarse	<25	<50	**240**	**100**
BH128	0-0.1	Coarse	<25	<50	<100	<100
BH129	0.08-0.3	Coarse	<25	<50	**200**	**260**
BH130	0.1-0.3	Coarse	<25	<50	<100	<100
BH131	0.06-0.3	Coarse	<25	<50	<100	<100
BH131 - Lab replicate	0.06-0.3	Coarse	<25	<50	<100	<100
BH131	0.5-0.7	Fine	<25	<50	<100	<100
BH132	0.03-0.2	Coarse	<25	<50	**130**	**250**
BH133	0-0.1	Coarse	<25	<50	<100	<100
BH133	0.7-0.75	Fine	<25	<50	<100	<100
BH134	0-0.1	Coarse	<25	<50	**410**	**370**
BH135	0.04-0.3	Fine	<25	<50	<100	<100
BH136	0-0.1	Fine	<25	<50	<100	<100
BH137	0.03-0.3	Coarse	<25	<50	**220**	**430**
BH137 - Lab replicate	0.03-0.3	Coarse	<25	<50	**210**	**410**
SDUP101	0-0.1	Coarse	<25	**50**	**460**	**390**
SDUP102	0-0.1	Fine	<25	<50	**110**	<100
SDUP103	0-0.1	Coarse	<25	<50	**220**	<100
SDUP104	0-0.1	Fine	<25	<50	<100	<100
SDUP104 - Lab replicate	0-0.1	Fine	<25	NA	NA	NA
SDUP104 - Lab replicate	0-0.1	Fine	NA	<50	<100	<100
SDUP105	0-0.1	Fine	<25	<50	<100	<100
SDUP106	0-0.1	Coarse	<25	<50	<100	<100
Total Number of Samples			57	57	57	57
Maximum Value			<PQL	50	460	540

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	0.16-0.3	Fine	800	1000	3500	10000
BH101 - Lab replicate	0.16-0.3	Fine	800	1000	3500	10000
BH102	0.18-0.3	Fine	800	1000	3500	10000
BH102	0.3-0.5	Fine	800	1000	3500	10000
BH103	0.22-0.4	Fine	800	1000	3500	10000
BH104	0.2-0.4	Fine	800	1000	3500	10000
BH105	0.08-0.2	Coarse	700	1000	2500	10000
BH106	0.04-0.2	Coarse	700	1000	2500	10000
BH106	1.3-1.5	Fine	800	1000	3500	10000
BH107	0.16-0.3	Fine	800	1000	3500	10000
BH108	0.16-0.3	Fine	800	1000	3500	10000
BH109	0.15-0.2	Coarse	700	1000	2500	10000
BH110	0.15-0.2	Coarse	700	1000	2500	10000
BH111	0.02-0.3	Coarse	700	1000	2500	10000
BH112	0.02-0.2	Coarse	700	1000	2500	10000
BH112 - Lab replicate	0.02-0.2	Coarse	700	1000	2500	10000
BH112	1.0-1.4	Fine	800	1000	3500	10000
BH113	0.16-0.25	Fine	800	1000	3500	10000
BH114	0.15-0.2	Coarse	700	1000	2500	10000
BH115	0.14-0.4	Fine	800	1000	3500	10000
BH115	0.6-0.9	Fine	800	1000	3500	10000
BH116	0.01-0.15	Coarse	700	1000	2500	10000
BH117	0.03-0.2	Coarse	700	1000	2500	10000
BH117	1.1-1.4	Fine	800	1000	3500	10000
BH118	0-0.1	Fine	800	1000	3500	10000
BH119	0.2-0.4	Fine	800	1000	3500	10000
BH119 - Lab replicate	0.2-0.4	Fine	800	1000	3500	10000
BH120	0.12-0.2	Coarse	700	1000	2500	10000
BH120	0.2-0.3	Fine	800	1000	3500	10000
BH121	0.02-0.2	Coarse	700	1000	2500	10000
BH122	0.03-0.2	Coarse	700	1000	2500	10000
BH123	0-0.1	Fine	800	1000	3500	10000
BH124	0.19-0.25	Coarse	700	1000	2500	10000
BH125	0.17-0.3	Coarse	700	1000	2500	10000
BH126	0.05-0.4	Coarse	700	1000	2500	10000
BH127	0-0.1	Coarse	700	1000	2500	10000
BH128	0-0.1	Coarse	700	1000	2500	10000
BH129	0.08-0.3	Coarse	700	1000	2500	10000
BH130	0.1-0.3	Coarse	700	1000	2500	10000
BH131	0.06-0.3	Coarse	700	1000	2500	10000
BH131 - Lab replicate	0.06-0.3	Coarse	700	1000	2500	10000
BH131	0.5-0.7	Fine	800	1000	3500	10000
BH132	0.03-0.2	Coarse	700	1000	2500	10000
BH133	0-0.1	Coarse	700	1000	2500	10000
BH133	0.7-0.75	Fine	800	1000	3500	10000
BH134	0-0.1	Coarse	700	1000	2500	10000
BH135	0.04-0.3	Fine	800	1000	3500	10000
BH136	0-0.1	Fine	800	1000	3500	10000
BH137	0.03-0.3	Coarse	700	1000	2500	10000
BH137 - Lab replicate	0.03-0.3	Coarse	700	1000	2500	10000
SDUP101	0-0.1	Coarse	700	1000	2500	10000
SDUP102	0-0.1	Fine	800	1000	3500	10000
SDUP103	0-0.1	Coarse	700	1000	2500	10000
SDUP104	0-0.1	Fine	800	1000	3500	10000
SDUP104 - Lab replicate	0-0.1	Fine	800	NA	NA	NA
SDUP104 - Lab replicate	0-0.1	Fine	NA	1000	3500	10000
SDUP105	0-0.1	Fine	800	1000	3500	10000
SDUP106	0-0.1	Coarse	700	1000	2500	10000

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		5,600	4,200	5,800	8,100	140	21,000	5,900	17,000	2,200	
Site Use		**HIGH DENSITY RESIDENTIAL - DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
BH101	0.16-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
BH101 - Lab replicate	0.16-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
BH102	0.18-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH102	0.3-0.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.4**
BH103	0.22-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
BH104	0.2-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
BH105	0.08-0.2	<25	<50	**200**	**400**	<0.2	<0.5	<1	<1	<1	**1**
BH106	0.04-0.2	<25	<50	**180**	**330**	<0.2	<0.5	<1	<1	<1	**0.8**
BH106	1.3-1.5	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1**
BH107	0.16-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH108	0.16-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH109	0.15-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.9**
BH110	0.15-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
BH111	0.02-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.9**
BH112	0.02-0.2	<25	<50	**270**	**450**	<0.2	<0.5	<1	<1	<1	**2**
BH112 - Lab replicate	0.02-0.2	<25	<50	**330**	**540**	<0.2	<0.5	<1	<1	<1	**2**
BH112	1.0-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**3.4**
BH113	0.16-0.25	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.6**
BH114	0.15-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.1**
BH115	0.14-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
BH115	0.6-0.9	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH116	0.01-0.15	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.9**
BH117	0.03-0.2	<25	<50	**170**	**260**	<0.2	<0.5	<1	<1	<1	**0.7**
BH117	1.1-1.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**2.5**
BH118	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**1.5**
BH119	0.2-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH119 - Lab replicate	0.2-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH120	0.12-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH120	0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.2**
BH121	0.02-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
BH122	0.03-0.2	<25	<50	**150**	**230**	<0.2	<0.5	<1	<1	<1	**0.7**
BH123	0-0.1	<25	<50	**260**	<100	<0.2	<0.5	<1	<1	<1	**1**
BH124	0.19-0.25	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH125	0.17-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.7**
BH126	0.05-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.8**
BH127	0-0.1	<25	<50	**240**	**100**	<0.2	<0.5	<1	<1	<1	**0.4**
BH128	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH129	0.08-0.3	<25	<50	**200**	**260**	<0.2	<0.5	<1	<1	<1	**0.4**
BH130	0.1-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH131	0.06-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
BH131 - Lab replicate	0.06-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.4**
BH131	0.5-0.7	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH132	0.03-0.2	<25	<50	**130**	**250**	<0.2	<0.5	<1	<1	<1	**0.3**
BH133	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.9**
BH133	0.7-0.75	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH134	0-0.1	<25	<50	**410**	**370**	<0.2	<0.5	<1	<1	<1	**0.6**
BH135	0.04-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.6**
BH136	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH137	0.03-0.3	<25	<50	**220**	**430**	<0.2	<0.5	<1	<1	<1	**0.14**
BH137 - Lab replicate	0.03-0.3	<25	<50	**210**	**410**	<0.2	<0.5	<1	<1	<1	**0.14**
SDUP101	0-0.1	<25	**50**	**460**	**390**	<0.2	<0.5	<1	<1	<1	NA
SDUP102	0-0.1	<25	<50	**110**	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP103	0-0.1	<25	<50	**220**	<100	<0.2	<0.5	<1	<1	<1	NA
SDUP104	0-0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<1.0	<3.0	NA
SDUP104 - Lab replicate	0-0.1	<25	NA	NA	NA	<0.20	<0.50	<1.0	<1.0	<3.0	NA
SDUP104 - Lab replicate	0-0.1	NA	NA	<100	<100	NA	NA	NA	NA	NA	NA
SDUP105	0-0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<1.0	<3.0	NA
SDUP106	0-0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<1.0	<3.0	NA
Total Number of Samples		57	56	57	57	57	57	57	57	57	50
Maximum Value		<PQL	50	460	540	<PQL	<PQL	<PQL	<PQL	<PQL	3.4

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

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TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL-B: Residential with minimal opportunities for soil access

FIELD DATA															LABORATORY 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)	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)
SAC			**No**					**0.04**			**0.001**			**0.001**											**0.04**	**0.001**
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19/06/2024	BH105	0.2-0.6	NA	<10	2,790	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH105	0.08-0.2	413.42	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
19/06/2024	BH106	0.2-1.3	NA	<10	7,380	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH106	0.04-0.2	810.34	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
19/06/2024	BH108	0.16-0.35	NA	<10	4,370	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH108	0.16-0.3	752.24	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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19/06/2024	BH111	0.02-0.3	NA	<10	4,650	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH111	0.02-0.3	981.92	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
19/06/2024	BH111	0.3-0.6	NA	<10	6,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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19/06/2024	BH112	0.2-1.0	NA	<10	4,390	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19/06/2024	BH112	1.0-1.5	NA	<10	3,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH112	1.0-1.4	438.69	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
19/06/2024	BH112	1.5-2.0	NA	<10	9,180	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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17/06/2024	BH115	0.14-0.6	NA	<10	4,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH115	0.14-0.4	766.11	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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19/06/2024	BH117	0.2-1.0	NA	<10	5,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19/06/2024	BH117	1.0-1.5	NA	<10	9,440	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH117	1.1-1.4	675.04	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
19/06/2024	BH118	0-0.1	No	10	11,770	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH118	0-0.1	654.09	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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18/06/2024	BH121	0.2-0.5	NA	<10	5,140	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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18/06/2024	BH122	0.2-0.8	NA	<10	4,580	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19/06/2024	BH123	0-0.1	No	<10	7,850	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH123	0-0.1	565.05	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
19/06/2024	BH123	0.1-0.5	NA	<10	3,100	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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18/06/2024	BH126	0.05-0.4	NA	<10	5,550	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH126	0.05-0.4	864.08	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
18/06/2024	BH127	0-0.3	No	10	10,770	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH127	0-0.1	397.99	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
19/06/2024	BH128	0-0.1	No	<10	6,650	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH128	0-0.1	814.45	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
19/06/2024	BH128	0.1-0.6	NA	<10	5,750	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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18/06/2024	BH131	0.06-0.3	NA	<10	1,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641-A	BH131	0.06-0.3	45	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	NA	NA	--	--	NA	NA
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19/06/2024	BH133	0-0.1	No	<10	2,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH133	0-0.1	414.24	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
19/06/2024	BH133	0.1-0.4	NA	10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
19/06/2024	BH133	0.4-0.7	NA	<10	1,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
18/06/2024	BH134	0-0.2	No	10	10,440	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH134	0-0.1	451.9	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
18/06/2024	BH134	0.2-0.4	NA	<10	2,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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18/06/2024	BH136	0-0.2	No	10	10,240	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	354641	BH136	0-0.1	583.06	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
18/06/2024	BH136	0.2-0.4	NA	<10	1,730	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
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19/06/2024	BH138	0.18-0.35	NA	<10	2,270	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Concentration above the SAC **VALUE**

JKEnvironments

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

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																			
							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	0.16-0.3	Fill: Silty Gravelly Clay	Fine	NA	NA	NA	**12**	**8**	**43**	**19**	**19**	**77**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH101 - Lab replicate	0.16-0.3	Fill: Silty Gravelly Clay	Fine	NA	NA	NA	**10**	**8**	**34**	**17**	**17**	**64**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH102	0.18-0.3	Fill: Silty Clay	Fine	8.4	13	NA	**7**	**17**	**42**	**9**	**71**	**43**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH102	0.3-0.5	Silty Clay	Fine	NA	NA	NA	**14**	**13**	**31**	**14**	**20**	**36**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH103	0.22-0.4	Fill: Silty Clay	Fine	NA	NA	NA	**12**	**12**	**59**	**23**	**17**	**70**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.09**
BH104	0.2-0.4	Siltstone	Fine	NA	NA	NA	**7**	**6**	**24**	**16**	**8**	**44**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH105	0.08-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**16**	**81**	**8**	**85**	**46**	<1	<0.1	<25	<50	**200**	**400**	<0.2	<0.5	<1	<1	**0.06**
BH106	0.04-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**13**	**59**	**3**	**93**	**86**	<1	<0.1	<25	<50	**180**	**330**	<0.2	<0.5	<1	<1	<0.05
BH106	1.3-1.5	Silty Clay	Fine	NA	NA	NA	**5**	**7**	**15**	**6**	**11**	**39**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH107	0.16-0.3	Siltstone	Fine	NA	NA	NA	<4	**3**	**23**	**9**	**3**	**28**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH108	0.16-0.3	Fill: Silty Clay	Fine	NA	NA	NA	**11**	**8**	**43**	**19**	**14**	**72**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH109	0.15-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	<4	**10**	**18**	**6**	**4**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH110	0.15-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	<4	**9**	**27**	**6**	**4**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH111	0.02-0.3	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**13**	**52**	<1	**100**	**41**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH112	0.02-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**14**	**55**	**2**	**77**	**33**	<1	<0.1	<25	<50	**270**	**450**	<0.2	<0.5	<1	<1	<0.05
BH112 - Lab replicate	0.02-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**13**	**78**	**2**	**79**	**35**	<1	<0.1	<25	<50	**330**	**540**	<0.2	<0.5	<1	<1	<0.05
BH112	1.0-1.4	Fill: Silty Clay	Fine	NA	NA	NA	**6**	**7**	**9**	**7**	**2**	**8**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH113	0.16-0.25	Siltstone	Fine	NA	NA	NA	**11**	**8**	**47**	**17**	**26**	**83**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH114	0.15-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	<4	**11**	**24**	**6**	**4**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH115	0.14-0.4	Fill: Silty Clay	Fine	NA	NA	NA	**8**	**8**	**24**	**10**	**5**	**31**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH115	0.6-0.9	Siltstone	Fine	NA	NA	NA	**11**	**5**	**24**	**9**	**4**	**30**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH116	0.01-0.15	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**14**	**55**	<1	**94**	**39**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH117	0.03-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**15**	**55**	<1	**92**	**40**	<1	<0.1	<25	<50	**170**	**260**	<0.2	<0.5	<1	<1	<0.05
BH117	1.1-1.4	Fill: Silty Clay	Fine	NA	NA	NA	**8**	**13**	**26**	**16**	**12**	**47**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH118	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**12**	**11**	**45**	**62**	**14**	**98**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.4**
BH119	0.2-0.4	Siltstone	Fine	NA	NA	NA	**10**	**9**	**43**	**17**	**25**	**81**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH119 - Lab replicate	0.2-0.4	Siltstone	Fine	NA	NA	NA	**9**	**10**	**40**	**16**	**30**	**83**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH120	0.12-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	<4	**9**	**31**	**5**	**5**	**14**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH120	0.2-0.3	Fill: Silty Clay	Fine	NA	NA	NA	**7**	**5**	**20**	**35**	**6**	**26**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH121	0.02-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**10**	**41**	**2**	**75**	**32**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH122	0.03-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	<4	**11**	**62**	**6**	**70**	**40**	<1	<0.1	<25	<50	**150**	**230**	<0.2	<0.5	<1	<1	<0.05
BH123	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**7**	**10**	**26**	**20**	**8**	**93**	<1	<0.1	<25	<50	**260**	<100	<0.2	<0.5	<1	<1	<0.05
BH124	0.19-0.25	Fill: Silty Sand	Coarse	10.1	26.5	NA	**6**	**11**	**41**	**25**	**11**	**52**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.08**
BH125	0.17-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	**4**	**18**	**31**	**18**	**23**	**39**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.2**
BH126	0.05-0.4	Fill: Clayey Sand	Coarse	10.1	26.5	NA	<4	**9**	**7**	**12**	**6**	**25**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH127	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**5**	**11**	**30**	**16**	**23**	**170**	<1	<0.1	<25	<50	**240**	**100**	<0.2	<0.5	<1	<1	<0.05
BH128	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**8**	**15**	**33**	**20**	**21**	**54**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH129	0.08-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**14**	**38**	**23**	**35**	**55**	<1	<0.1	<25	<50	**200**	**260**	<0.2	<0.5	<1	<1	**0.53**
BH130	0.1-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**17**	**33**	**17**	**31**	**42**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.1**
BH131	0.06-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**9**	**11**	**12**	**14**	**22**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	**0.08**
BH131 - Lab replicate	0.06-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**9**	**8**	**12**	**10**	**21**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH131	0.5-0.7	Siltstone	Fine	NA	NA	NA	**5**	**6**	**50**	**24**	**10**	**95**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH132	0.03-0.2	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**14**	**51**	<1	**89**	**37**	<1	<0.1	<25	<50	**130**	**250**	<0.2	<0.5	<1	<1	<0.05
BH133	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**7**	**9**	**19**	**26**	**7**	**56**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH133	0.7-0.75	Silty Clay	Fine	NA	NA	NA	**14**	**30**	**21**	**16**	**17**	**30**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH134	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**5**	**10**	**28**	**18**	**12**	**92**	<1	<0.1	<25	<50	**410**	**370**	<0.2	<0.5	<1	<1	<0.05
BH135	0.04-0.3	Fill: Silty Clay	Fine	NA	NA	NA	**11**	**10**	**39**	**21**	**14**	**68**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH136	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**5**	**11**	**18**	**23**	**9**	**59**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH137	0.03-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**19**	**28**	**18**	**21**	**59**	<1	<0.1	<25	<50	**220**	**430**	<0.2	<0.5	<1	<1	**0.2**
BH137 - Lab replicate	0.03-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**15**	**39**	**19**	**20**	**53**	<1	<0.1	<25	<50	**210**	**410**	<0.2	<0.5	<1	<1	**0.3**
BH138	0.18-0.3	Fill: Silty Clay	Fine	NA	NA	NA	**9**	**14**	**28**	**14**	**18**	**41**	NA	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	**0.1**
BH139	0.18-0.23	Fill: Silty Sand	Coarse	10.1	26.5	NA	<4	**7**	**62**	**4**	**8**	**19**	NA	<0.1	NA	NA	NA	NA	NA	NA	NA	NA	<0.05
SDUP101	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**6**	**12**	**30**	**19**	**14**	**110**	<1	<0.1	<25	**50**	**460**	**390**	<0.2	<0.5	<1	<1	<0.05
SDUP102	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**7**	**16**	**24**	**24**	**17**	**63**	<1	<0.1	<25	<50	**110**	<100	<0.2	<0.5	<1	<1	<0.05
SDUP103	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**6**	**13**	**42**	**21**	**32**	**200**	<1	<0.1	<25	<50	**220**	<100	<0.2	<0.5	<1	<1	<0.05
SDUP104	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**8.5**	**9.1**	**26**	**38**	**9.6**	**59**	<3	<0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<1.0	**0.22**
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**10.4**	**11.6**	**30.6**	**41.4**	**11.3**	**70.5**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	NA	NA	NA	NA	NA	NA	<3	NA	<25	NA	NA	NA	<0.20	<0.50	<1.0	<1.0	NA
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	NA	NA	<100	<100	NA	NA	NA	NA	**0.19**
SDUP105	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	**6.2**	**8.5**	**26**	**15**	**6.8**	**52**	<3	<0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<1.0	<0.050
SDUP106	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	**7.9**	**9.6**	**32**	**20**	**22**	**60**	<3	<0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<1.0	<0.050
Total Number of Samples				32	32	0	59	59	59	59	59	59	57	54	57	56	57	57	57	57	57	57	59
Maximum Value				10.1	26.5	NA	14	30	81	62	100	200	<PQL	<PQL	<PQL	50	460	540	<PQL	<PQL	<PQL	<PQL	0.53
Mean Value				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	99.75	NC	NC	NC	NC	NC	NC
Standard Deviation				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	94.64	NC	NC	NC	NC	NC	NC
% UCL				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	95	NC	NC	NC	NC	NC	NC
UCL Value				NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	165	NC	NC	NC	NC	NC	NC

Concentration above the SAC **VALUE** — Standard deviation exceeds data assessment criteria **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	0.16-0.3	Fill: Silty Gravelly Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH101 - Lab replicate	0.16-0.3	Fill: Silty Gravelly Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH102	0.18-0.3	Fill: Silty Clay	Fine	8.4	13	NA	100	200	240	1300	280	820	170	180	180	120	1300	5600	65	105	125	45	20
BH102	0.3-0.5	Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	--	180	120	1300	5600	65	105	125	45	20
BH103	0.22-0.4	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH104	0.2-0.4	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH105	0.08-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH106	0.04-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH106	1.3-1.5	Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	--	180	120	1300	5600	65	105	125	45	20
BH107	0.16-0.3	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH108	0.16-0.3	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH109	0.15-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH110	0.15-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH111	0.02-0.3	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH112	0.02-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH112 - Lab replicate	0.02-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH112	1.0-1.4	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH113	0.16-0.25	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH114	0.15-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH115	0.14-0.4	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH115	0.6-0.9	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	--	180	120	1300	5600	65	105	125	45	20
BH116	0.01-0.15	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH117	0.03-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH117	1.1-1.4	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH118	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH119	0.2-0.4	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH119 - Lab replicate	0.2-0.4	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH120	0.12-0.2	Fill: Clayey Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH120	0.2-0.3	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH121	0.02-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH122	0.03-0.2	Fill: Gravelly Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH123	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH124	0.19-0.25	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH125	0.17-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH126	0.05-0.4	Fill: Clayey Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH127	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH128	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH129	0.08-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH130	0.1-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH131	0.06-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH131 - Lab replicate	0.06-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH131	0.5-0.7	Siltstone	Fine	NA	NA	NA	100	200	90	1300	35	190	170	--	180	120	1300	5600	65	105	125	45	20
BH132	0.03-0.2	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH133	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH133	0.7-0.75	Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	--	180	120	1300	5600	65	105	125	45	20
BH134	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH135	0.04-0.3	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH136	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH137	0.03-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH137 - Lab replicate	0.03-0.3	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
BH138	0.18-0.3	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	--	180	--	--	--	--	--	--	--	--	20
BH139	0.18-0.23	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	--	180	--	--	--	--	--	--	--	--	20
SDUP101	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
SDUP102	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
SDUP103	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20
SDUP104	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	--	--	--	--	--	--	--	--	--	--	--
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	--	--	--	--	--	--	170	--	180	--	--	--	65	105	125	45	--
SDUP104 - Lab replicate	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	--	--	--	--	--	--	--	180	--	--	1300	5600	--	--	--	--	20
SDUP105	0-0.1	Fill: Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
SDUP106	0-0.1	Fill: Silty Sand	Coarse	10.1	26.5	NA	100	200	250	1300	360	1100	170	180	180	120	300	2800	50	85	70	105	20

TABLE S7
SOIL LABORATORY RESULTS USED FOR STATISTICAL ANALYSIS
All data in mg/kg unless stated otherwise

				TRH
				>C_{16}-C_{34} (F3)
PQL - Envirolab Services				100
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**	
BH101	0.16-0.3	Fill: Silty Gravelly Clay	Fine	50
BH102	0.18-0.3	Fill: Silty Clay	Fine	50
BH103	0.22-0.4	Fill: Silty Clay	Fine	50
BH104	0.2-0.4	Siltstone	Fine	50
BH105	0.08-0.2	Fill: Gravelly Sand	Coarse	200
BH106	0.04-0.2	Fill: Gravelly Sand	Coarse	180
BH107	0.16-0.3	Siltstone	Fine	50
BH108	0.16-0.3	Fill: Silty Clay	Fine	50
BH109	0.15-0.2	Fill: Clayey Sand	Coarse	50
BH110	0.15-0.2	Fill: Clayey Sand	Coarse	50
BH111	0.02-0.3	Fill: Gravelly Sand	Coarse	50
BH112	0.02-0.2	Fill: Gravelly Sand	Coarse	330
BH112	1.0-1.4	Fill: Silty Clay	Fine	50
BH113	0.16-0.25	Siltstone	Fine	50
BH114	0.15-0.2	Fill: Clayey Sand	Coarse	50
BH115	0.14-0.4	Fill: Silty Clay	Fine	50
BH116	0.01-0.15	Fill: Gravelly Sand	Coarse	50
BH117	0.03-0.2	Fill: Gravelly Sand	Coarse	170
BH117	1.1-1.4	Fill: Silty Clay	Fine	50
BH118	0-0.1	Fill: Silty Clay	Fine	50
BH119	0.2-0.4	Siltstone	Fine	50
BH120	0.12-0.2	Fill: Clayey Sand	Coarse	50
BH120	0.2-0.3	Fill: Silty Clay	Fine	50
BH121	0.02-0.2	Fill: Gravelly Sand	Coarse	50
BH122	0.03-0.2	Fill: Gravelly Sand	Coarse	150
BH123	0-0.1	Fill: Silty Clay	Fine	260
BH124	0.19-0.25	Fill: Silty Sand	Coarse	50
BH125	0.17-0.3	Fill: Silty Sand	Coarse	50
BH126	0.05-0.4	Fill: Clayey Sand	Coarse	50
BH127	0-0.1	Fill: Silty Sand	Coarse	240
BH128	0-0.1	Fill: Silty Sand	Coarse	50
BH129	0.08-0.3	Fill: Silty Sand	Coarse	200
BH130	0.1-0.3	Fill: Silty Sand	Coarse	50
BH131	0.06-0.3	Fill: Silty Sand	Coarse	50
BH132	0.03-0.2	Fill: Silty Sand	Coarse	130
BH133	0-0.1	Fill: Silty Sand	Coarse	50
BH134	0-0.1	Fill: Silty Sand	Coarse	460
BH135	0.04-0.3	Fill: Silty Clay	Fine	50
BH136	0-0.1	Fill: Silty Clay	Fine	50
BH137	0.03-0.3	Fill: Silty Sand	Coarse	220
Total Number of Samples				40
Mean Value				99.75
Standard Deviation				94.64
% UCL				95
UCL Value				165

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	CWQG* 2007 Fresh Waters	SAMPLES						
				MW2	MW2 - Lab replicate	MW4	MW4 - Lab replicate	MW6	WDUP101	WDUP102
Inorganic Compounds and Parameters										
pH		6.5 - 8.5	See ANZG 2018	7.1	NA	6.9	NA	7.2	NA	NA
Electrical Conductivity (µS/cm)	1	NSL	See ANZG 2018	**2800**	NA	**3900**	NA	**2200**	NA	NA
Metals and Metalloids										
Arsenic (As III)	1	24	See ANZG 2018	<1	NA	**2**	**2**	<1	**2**	<1
Cadmium	0.1	0.2	See ANZG 2018	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium (SAC for Cr III adopted)	1	3.3	See ANZG 2018	<1	NA	<1	<1	<1	<1	<1
Copper	1	1.4	See ANZG 2018	<1	NA	<1	<1	<1	<1	<1
Lead	1	3.4	See ANZG 2018	<1	NA	<1	<1	<1	<1	<1
Total Mercury (inorganic)	0.05	0.06	See ANZG 2018	<0.05	<0.05	<0.05	[NT]	<0.05	<0.05	<0.05
Nickel	1	11	See ANZG 2018	**2**	NA	**6**	**6**	<1	**6**	<1
Zinc	1	8	See ANZG 2018	**6**	NA	**16**	**16**	**1**	**16**	<1
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)										
Benzene	1	950	See ANZG 2018	<1	<1	<1	NA	<1	<1	<1
Toluene	1	180	See ANZG 2018	<1	<1	<1	NA	<1	<1	<1
Ethylbenzene	1	80	See ANZG 2018	<1	<1	<1	NA	<1	<1	<1
m+p-xylene	2	75	See ANZG 2018	<2	<2	<2	NA	<2	<2	<2
o-xylene	1	350	See ANZG 2018	<1	<1	<1	NA	<1	<1	<1
Total xylenes	2	NSL	See ANZG 2018	<2	<2	<2	NA	<2	<2	<2
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	0.2	16	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Acenaphthylene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Acenaphthene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Fluorene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Phenanthrene	0.1	0.6	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Anthracene	0.1	0.01	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Fluoranthene	0.1	1	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Pyrene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Benzo(a)anthracene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Chrysene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	0.2	NSL	See ANZG 2018	<0.2	NA	<0.2	NA	<0.2	<0.2	<0.1
Benzo(a)pyrene	0.1	0.1	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	0.1	NSL	See ANZG 2018	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.1
Organochlorine Pesticides (OCPs)										
Imidacloprid	0.05	NSL	0.23	<0.05	<0.05	**0.3**	NA	<0.05	**0.41**	NA
alpha-BHC	0.001	NSL	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
HCB	0.001	NSL	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
beta-BHC	0.001	NSL	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
gamma-BHC	0.001	NSL	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
delta-BHC	0.001	NSL	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Heptachlor	0.001	0.01	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Heptachlor Epoxide	0.001			<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Aldrin	0.001	0.001	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Dieldrin	0.001	0.01	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
gamma-Chlordane	0.001	0.03	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
alpha-Chlordane	0.001			<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Endosulfan I	0.002	0.03	See ANZG 2018	<0.002	NA	<0.002	NA	<0.002	<0.002	NA
Endosulfan II	0.002			<0.002	NA	<0.002	NA	<0.002	<0.002	NA
Endosulfan Sulphate	0.001			<0.001	NA	<0.001	NA	<0.001	<0.001	NA
DDT	0.001	0.006	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
pp-DDD	0.001			<0.001	NA	<0.001	NA	<0.001	<0.001	NA
pp-DDE	0.001			<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Endrin	0.001	0.01	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Endrin Aldehyde	0.001			<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Methoxy-chlor	0.001	0.005	See ANZG 2018	<0.001	NA	<0.001	NA	<0.001	<0.001	NA

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

* SAC derived from the Interim Guideline Values for imidacloprid presented in the Canadian Water Quality Guidelines for the Protection of Aquatic Life (2007). SAC is not an ANZG criterion.

JKEnvironments

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						
			MW2	MW2 - Lab replicate	MW4	MW4 - Lab replicate	MW6	WDUP101	WDUP102
Inorganic Compounds and Parameters									
pH		6.5 - 8.5	7.1	NA	6.9	NA	7.2	NA	NA
Electrical Conductivity (µS/cm)	1	NSL	**2800**	NA	**3900**	NA	**2200**	NA	NA
Metals and Metalloids									
Arsenic (As III)	1	100	<1	NA	**2**	**2**	<1	**2**	<1.0
Cadmium	0.1	20	<0.1	NA	<0.1	<0.1	<0.1	<0.1	<0.10
Chromium (total)	1	500	<1	NA	<1	<1	<1	<1	<1.0
Copper	1	20000	<1	NA	<1	<1	<1	<1	<1.0
Lead	1	100	<1	NA	<1	<1	<1	<1	<1.0
Total Mercury (inorganic)	0.05	10	<0.05	<0.05	<0.05	[NT]	<0.05	<0.05	<0.050
Nickel	1	200	**2**	NA	**6**	**6**	<1	**6**	<1.0
Zinc	1	30000	**6**	NA	**16**	**16**	**1**	**16**	<1.0
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)									
Benzene	1	10	<1	<1	<1	NA	<1	<1	<1.0
Toluene	1	8000	<1	<1	<1	NA	<1	<1	<1.0
Ethylbenzene	1	3000	<1	<1	<1	NA	<1	<1	<1.0
m+p-xylene	2	NSL	<2	<2	<2	NA	<2	<2	<2.0
o-xylene	1	NSL	<1	<1	<1	NA	<1	<1	<1.0
Total xylenes	2	6000	<2	<2	<2	NA	<2	<2	<2
Polycyclic Aromatic Hydrocarbons (PAHs)									
Naphthalene	0.2	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Acenaphthylene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Acenaphthene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Fluorene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Phenanthrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Fluoranthene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Pyrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Benzo(a)anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Chrysene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Benzo(b,j+k)fluoranthene	0.2	NSL	<0.2	NA	<0.2	NA	<0.2	<0.2	<0.20
Benzo(a)pyrene	0.1	0.1	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Indeno(1,2,3-c,d)pyrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Dibenzo(a,h)anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Benzo(g,h,i)perylene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	<0.1	<0.10
Organochlorine Pesticides (OCPs)									
Imidacloprid	0.05	NSL	<0.05	<0.05	**0.3**	NA	<0.05	**0.41**	NA
alpha-BHC	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
HCB	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
beta-BHC	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
gamma-BHC	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
delta-BHC	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Heptachlor	0.001	3	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Heptachlor Epoxide	0.001		<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Aldrin	0.001	3	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Dieldrin	0.001		<0.001	NA	<0.001	NA	<0.001	<0.001	NA
gamma-Chlordane	0.001	20	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
alpha-Chlordane	0.001		<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Endosulfan I	0.002	200	<0.002	NA	<0.002	NA	<0.002	<0.002	NA
Endosulfan II	0.002		<0.002	NA	<0.002	NA	<0.002	<0.002	NA
Endosulfan Sulphate	0.001		<0.001	NA	<0.001	NA	<0.001	<0.001	NA
DDT	0.001	90	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
pp-DDD	0.001		<0.001	NA	<0.001	NA	<0.001	<0.001	NA
pp-DDE	0.001		<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Endrin	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Endrin Aldehyde	0.001	NSL	<0.001	NA	<0.001	NA	<0.001	<0.001	NA
Methoxychlor	0.001	3,000	<0.001	NA	<0.001	NA	<0.001	<0.001	NA

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

TABLE G3
GROUNDWATER LABORATORY RESULTS COMPARED TO HSLs
All data in µg/L unless stated otherwise

				C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services				10	50	1	1	1	2	1	
NEPM 2013 - Land Use Category				**HSL-D: COMMERCIAL/INDUSTRIAL**							
Sample Reference	**Water Depth**	**Depth Category**	**Soil Category**								
MW2	4.95	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	0
MW2 - Lab replicate	4.95	2m to <4m	Sand	<10	NA	<1	<1	<1	<2	<1	0
MW4	3.95	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	0
MW6	4.34	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	0
WDUP101	3.95	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	NA
WDUP102	4.34	2m to <4m	Sand	<10	<50	<1.0	<1.0	<1.0	<2	<1.0	NA
Total Number of Samples				6	5	6	6	6	6	6	5
Maximum Value				<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	0

Concentration above the SAC	**VALUE**
Site specific assesment (SSA) required	**VALUE**
Concentration above the PQL	**Bold**

The guideline corresponding to the elevated value is highlighted in grey in the Groundwater Assessment Criteria Table below

HSL GROUNDWATER ASSESSMENT CRITERIA

Sample Reference	**Water Depth**	**Depth Category**	**Soil Category**	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
MW2	4.95	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
MW2 - Lab replicate	4.95	2m to <4m	Sand	6000	NA	5000	NL	NL	NL	NL
MW4	3.95	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
MW6	4.34	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
WDUP101	3.95	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
WDUP102	4.34	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL

JKEnvironments

TABLE G4
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					
					MW2	MW2 - Lab replicate	MW4	MW6	WDUP101	WDUP102
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	-	<50	NA	<50	<50	<50	<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	<1.0

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

JKEnvironments

TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene
	PQL Envirolab SYD		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*
	PQL Envirolab VIC		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*
Intra	BH134	0-0.1	<25	<50	410	370	<0.2	<0.5	<1	<2	<1
laboratory	SDUP101	0-0.1	<25	50	460	390	<0.2	<0.5	<1	<2	<1
duplicate	MEAN		nc	37.5	435	380	nc	nc	nc	nc	nc
	RPD %		nc	67%	11%	5%	nc	nc	nc	nc	nc
Intra	BH136	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
laboratory	SDUP102	0-0.1	<25	<50	110	<100	<0.2	<0.5	<1	<2	<1
duplicate	MEAN		nc	nc	80	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	75%	nc	nc	nc	nc	nc	nc
Intra	BH127	0-0.1	<25	<50	240	100	<0.2	<0.5	<1	<2	<1
laboratory	SDUP103	0-0.1	<25	<50	220	<100	<0.2	<0.5	<1	<2	<1
duplicate	MEAN		nc	nc	230	75	nc	nc	nc	nc	nc
	RPD %		nc	nc	9%	67%	nc	nc	nc	nc	nc
Inter	BH118	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
laboratory	SDUP104	0-0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<2.0	<1.0
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH123	0-0.1	<25	<50	260	<100	<0.2	<0.5	<1	<2	<1
laboratory	SDUP105	0-0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<2.0	<1.0
duplicate	MEAN		nc	nc	155	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	135%	nc	nc	nc	nc	nc	nc
Inter	BH128	0-0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
laboratory	SDUP106	0-0.1	<25	<50	<100	<100	<0.20	<0.50	<1.0	<2.0	<1.0
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc
Trip	TB-S101		<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
Blank	17-20/06/2024										
Trip	TB-S102		<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
Blank	17-20/06/2024										
Trip	TS-S101		-	-	-	-	99%	100%	99%	98%	98%
Spike	17-20/06/2024										
Trip	TS-S102		-	-	-	-	100%	97%	97%	97%	97%
Spike	17-20/06/2024										
Field	FR-101-HA	µg/L	39	<50	<100	<100	<1	<1	<1	<2	<1
Rinsate	19/06/24										

			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
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
Intra	BH134	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP101	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	BH136	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP102	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	BH127	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP103	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH118	0-0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	0.5	0.5	0.3	0.2	0.5	0.4	0.2	<0.1	0.3
laboratory	SDUP104	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.31	0.34	0.12	0.17	0.34	0.22	0.14	<0.10	0.2
duplicate	MEAN		nc	nc	nc	nc	0.125	nc	0.405	0.42	0.21	0.185	0.42	0.31	0.17	nc	0.25
	RPD %		nc	nc	nc	nc	120%	nc	47%	38%	86%	16%	38%	58%	35%	nc	40%
Inter	BH123	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP105	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.050	<0.10	<0.10	<0.10
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH128	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
laboratory	SDUP106	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.050	<0.10	<0.10	<0.10
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Trip	TB-S101		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Blank	17-20/06/2024																
Trip	TB-S102		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Blank	17-20/06/2024																
Trip	TS-S101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	17-20/06/2024																
Trip	TS-S102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	17-20/06/2024																
Field	FR-101-HA	µg/L	<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
Rinsate	19/06/24																

			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
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Intra	BH134	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP101	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	BH136	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP102	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra	BH127	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP103	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH118	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP104	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH123	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP105	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	BH128	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
laboratory	SDUP106	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Trip	TB-S101		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Blank	17-20/06/2024																					
Trip	TB-S102		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Blank	17-20/06/2024																					
Trip	TS-S101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	17-20/06/2024																					
Trip	TS-S102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	17-20/06/2024																					
Field	FR-101-HA	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rinsate	19/06/24																					

			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
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
Intra	BH134	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	10	28	18	<0.1	12	92
laboratory	SDUP101	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	12	30	19	<0.1	14	110
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	5.5	nc	11	29	18.5	nc	13	101
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	18%	nc	18%	7%	5%	nc	15%	18%
Intra	BH136	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	11	18	23	<0.1	9	59
laboratory	SDUP102	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.4	16	24	24	<0.1	17	63
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	6	nc	13.5	21	23.5	nc	13	61
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	33%	nc	37%	29%	4%	nc	62%	7%
Intra	BH127	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	11	30	16	<0.1	23	170
laboratory	SDUP103	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	13	42	21	<0.1	32	200
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	5.5	nc	12	36	18.5	nc	27.5	185
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	18%	nc	17%	33%	27%	nc	33%	16%
Inter	BH118	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	12	<0.4	11	45	62	<0.1	14	98
laboratory	SDUP104	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	8.5	<0.40	9.1	26	38	<0.10	9.6	59
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	10.25	nc	10.05	35.5	50	nc	11.8	78.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	34%	nc	19%	54%	48%	nc	37%	50%
Inter	BH123	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.4	10	26	20	<0.1	8	93
laboratory	SDUP105	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	6.2	<0.40	8.5	26	15	0.14	6.8	52
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	6.6	nc	9.25	26	17.5	0.095	7.4	72.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	12%	nc	16%	0%	29%	95%	16%	57%
Inter	BH128	0-0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8	<0.4	15	33	20	<0.1	21	54
laboratory	SDUP106	0-0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	7.9	<0.40	9.6	32	20	<0.10	22	60
duplicate	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	7.95	nc	12.3	32.5	20	nc	21.5	57
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	1%	nc	44%	3%	0%	nc	5%	11%
Trip	TB-S101		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4	<0.4	4	<1	3	<0.1	<1	4
Blank	17-20/06/2024																						
Trip	TB-S102		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4	<0.4	3	<1	3	<0.1	<1	3
Blank	17-20/06/2024																						
Trip	TS-S101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	17-20/06/2024																						
Trip	TS-S102		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	17-20/06/2024																						
Field	FR-101-HA	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.01	<0.01	0.7	<0.03	<0.0005	<0.02	<0.02
Rinsate	19/06/24																						

Result outside of QA/QC acceptance criteria

Rinsate metals results in mg/L

TABLE Q2
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
	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*
	PQL Envirolab VIC	*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*
Intra	MW4	<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
laboratory	WDUP101	<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
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
	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
Inter	MW6	<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
laboratory	WDUP102	<10	<50	100	<100	<1.0	<1.0	<1.0	<2.0	<1.0	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10
duplicate	MEAN	nc	nc	75	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %	nc	nc	67%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Trip Blank	TB-W101 21/06/2024	<10	150	<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
Trip Spike	TS-W101 21/06/2024	-	-	-	-	119%	108%	111%	106%	102%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		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	Imidacloprid
	PQL Envirolab SYD	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.002*	*0.001*	*0.001*	*0.001*	*0.001*	*0.002*	*0.001*	*0.001*	*0.001*	*0.001*	*0.05*
	PQL Envirolab VIC	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.001*	*0.002*	*0.001*	*0.001*	*0.001*	*0.001*	*0.002*	*0.001*	*0.001*	*0.001*	*0.001*	*-*
Intra	MW4	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.3
laboratory	WDUP101	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.41
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0.355
	RPD %	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	31%
Inter	MW6	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	NA
laboratory	WDUP102	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Trip Blank	TB-W101 21/06/2024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Spike	TS-W101 21/06/2024	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-

		Arsenic	Cadmium	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD	*1*	*0.1*	*1*	*1*	*1*	*0.05*	*1*	*1*
	PQL Envirolab VIC	*1*	*0.1*	*1*	*1*	*1*	*0.05*	*1*	*1*
Intra	MW4	2	<0.1	<1	<1	<1	<0.05	6	16
laboratory	WDUP101	2	<0.1	<1	<1	<1	<0.05	6	16
duplicate	MEAN	2	nc	nc	nc	nc	nc	6	16
	RPD %	0%	nc	nc	nc	nc	nc	0%	0%
Inter	MW6	<1	<0.1	<1	<1	<1	<0.05	<1	1
laboratory	WDUP102	<1.0	<0.10	<1.0	<1.0	<1.0	<0.050	<1.0	<1.0
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	0.75
	RPD %	nc	nc	nc	nc	nc	nc	nc	67%
Trip Blank	TB-W101 21/06/2024	<1	<0.1	<1	<1	<1	<0.05	<1	<1
Trip Spike	TS-W101 21/06/2024	-	-	-	-	-	-	-	

Result outside of QA/QC acceptance criteria ==Value==

PSI Data 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
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
GIL:	Groundwater Investigation Levels
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)
PQL:	Practical Quantitation Limit
SAC:	Site Assessment Criteria
SSA:	Site Specific Assessment
TB:	Trip Blank
TCA:	1,1,1 Trichloroethane (methyl chloroform)
TCE:	Trichloroethylene (Trichloroethene)
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
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).

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).

QA/QC Table:

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

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-B: 'Residential with minimal opportunities for soil access; including dwellings with fully/permanently paved yards like high-rise buildings'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	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	100
Site Assessment Criteria (SAC)			500	150	500	30000	1200	120	1200	60000	400	4	15	400	500	10	90	600	10	340	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH1	0.05-0.2	Fill: Sandy Clay	<4	<0.4	**33**	**34**	**4**	**0.1**	**73**	**33**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH1 - Lab replicate	0.05-0.2	Fill: Sandy Clay	<4	<0.4	**32**	**32**	**4**	**<0.1**	**68**	**33**	**0.2**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH2	0.05-0.2	Fill: Gravelly Sand	<4	<0.4	**16**	**66**	**5**	**<0.1**	**100**	**43**	**<0.05**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	0.18-0.3	Fill: Sandy Clay	**12**	<0.4	**7**	**50**	**20**	**<0.1**	**25**	**67**	**<0.05**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH4	0.17-0.3	Fill: Sandy Clay	<4	<0.4	**2**	**8**	**4**	**<0.1**	**2**	**10**	**<0.05**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH5	0.1-0.2	Silty Clay	**11**	<0.4	**19**	**23**	**20**	**<0.1**	**12**	**22**	**<0.05**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH6	0.05-0.2	Fill: Gravelly Sand	<4	<0.4	**9**	**24**	**21**	**<0.1**	**20**	**26**	**0.79**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
SDUP1	0.05-0.2	Fill: Sandy Clay	<4	<0.4	**15**	**51**	**4**	**<0.1**	**81**	**37**	**<0.05**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP2	0.05-0.2	Fill: Gravelly Sand	**10**	<0.4	**7**	**32**	**13**	**<0.1**	**7**	**51**	**<0.05**	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
Total Number of Samples			9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	6
Maximum Value			12	<PQL	33	66	21	0.1	100	67	0.79	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Not Detected

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

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**								
BH1	0.05-0.2	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH1 - Lab replicate	0.05-0.2	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.1
BH2	0.05-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH3	0.18-0.3	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
BH4	0.17-0.3	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH5	0.1-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.5
BH6	0.05-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	0.3
SDUP1	0.05-0.2	Fill: Sandy Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0.05-0.2	Fill: Gravelly Sand	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples					9	9	9	9	9	9	9	7
Maximum Value					<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	0.5

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
BH1	0.05-0.2	Fill: Sandy Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH1 - Lab replicate	0.05-0.2	Fill: Sandy Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH2	0.05-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH3	0.18-0.3	Fill: Sandy Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH4	0.17-0.3	Fill: Sandy Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH5	0.1-0.2	Silty Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
BH6	0.05-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP1	0.05-0.2	Fill: Sandy Clay	0m to <1m	Sand	260	NL	3	NL	NL	230	NL
SDUP2	0.05-0.2	Fill: Gravelly Sand	0m to <1m	Sand	260	NL	3	NL	NL	230	NL

Preliminary Site Investigation (PSI)
1 Kellicar Road, Campbelltown, NSW
E36120PW

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			**RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH1	0.05-0.2	Fine	<25	<50	**440**	**700**
BH1 - Lab replicate	0.05-0.2	Fine	<25	<50	**470**	**630**
BH2	0.05-0.2	Coarse	<25	<50	<100	<100
BH3	0.18-0.3	Fine	<25	<50	<100	<100
BH4	0.17-0.3	Fine	<25	<50	<100	<100
BH5	0.1-0.2	Fine	<25	<50	<100	<100
BH6	0.05-0.2	Coarse	<25	<50	**170**	**210**
SDUP1	0.05-0.2	Fine	<25	<50	**150**	**200**
SDUP2	0.05-0.2	Coarse	<25	<50	<100	<100
Total Number of Samples			9	9	9	9
Maximum Value			<PQL	<PQL	470	700

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)
BH1	0.05-0.2	Fine	800	1000	3500	10000
BH1 - Lab replicate	0.05-0.2	Fine	800	1000	3500	10000
BH2	0.05-0.2	Coarse	700	1000	2500	10000
BH3	0.18-0.3	Fine	800	1000	3500	10000
BH4	0.17-0.3	Fine	800	1000	3500	10000
BH5	0.1-0.2	Fine	800	1000	3500	10000
BH6	0.05-0.2	Coarse	700	1000	2500	10000
SDUP1	0.05-0.2	Fine	800	1000	3500	10000
SDUP2	0.05-0.2	Coarse	700	1000	2500	10000

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		5,600	4,200	5,800	8,100	140	21,000	5,900	17,000	2,200	
Site Use		HIGH DENSITY RESIDENTIAL - DIRECT SOIL CONTACT									
Sample Reference	**Sample Depth**										
BH1	0.05-0.2	<25	<50	**440**	**700**	<0.2	<0.5	<1	<1	<1	**0.1**
BH1 - Lab replicate	0.05-0.2	<25	<50	**470**	**630**	<0.2	<0.5	<1	<1	<1	**0.1**
BH2	0.05-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH3	0.18-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.3**
BH4	0.17-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH5	0.1-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	**0.5**
BH6	0.05-0.2	<25	<50	**170**	**210**	<0.2	<0.5	<1	<1	<1	**0.3**
SDUP1	0.05-0.2	<25	<50	**150**	**200**	<0.2	<0.5	<1	<1	<1	NA
SDUP2	0.05-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	NA
Total Number of Samples		9	9	9	9	9	9	9	9	9	7
Maximum Value		<PQL	<PQL	470	700	<PQL	<PQL	<PQL	<PQL	<PQL	0.5

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

JKEnvironments

TABLE S5
ASBESTOS QUANTIFICATION - LABORATORY RESULTS
HSL-B: Residential with minimal opportunities for soil access

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)
										0.04	**0.001**
329058	BH1	0.05-0.2	911.46	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
329058	BH2	0.05-0.2	1056.61	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
329058	BH3	0.18-0.3	908.36	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
329058	BH4	0.17-0.3	1048.53	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
329058	BH5	0.1-0.2	638.81	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
329058	BH6	0.05-0.2	837.74	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

JKEnvironments

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

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																			
							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**																				
BH1	0.05-0.2	Fill: Sandy Clay	Fine	NA	NA	NA	<4	**33**	**34**	**4**	**73**	**33**	<1	<0.1	<25	<50	**440**	**700**	<0.2	<0.5	<1	<1	<0.05
BH1 - Lab replicate	0.05-0.2	Fill: Sandy Clay	Fine	NA	NA	NA	<4	**32**	**32**	**4**	**68**	**33**	<1	<0.1	<25	<50	**470**	**630**	<0.2	<0.5	<1	<1	<0.05
BH2	0.05-0.2	Fill: Gravelly Sand	Coarse	NA	NA	NA	<4	**16**	**66**	**5**	**100**	**43**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0.18-0.3	Fill: Sandy Clay	Fine	NA	NA	NA	**12**	**7**	**50**	**20**	**25**	**67**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0.17-0.3	Fill: Sandy Clay	Fine	NA	NA	NA	<4	**2**	**8**	**4**	**2**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0.1-0.2	Silty Clay	Fine	NA	NA	NA	**11**	**19**	**23**	**20**	**12**	**22**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0.05-0.2	Fill: Gravelly Sand	Coarse	NA	NA	NA	<4	**9**	**24**	**21**	**20**	**26**	<1	<0.1	<25	<50	**170**	**210**	<0.2	<0.5	<1	<1	**0.1**
SDUP1	0.05-0.2	Fill: Sandy Clay	Fine	NA	NA	NA	<4	**15**	**51**	**4**	**81**	**37**	<1	<0.1	<25	<50	**150**	**200**	<0.2	<0.5	<1	<1	<0.05
SDUP2	0.05-0.2	Fill: Gravelly Sand	Coarse	NA	NA	NA	**10**	**7**	**32**	**13**	**7**	**51**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
Total Number of Samples				0	0	0	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Maximum Value				NA	NA	NA	12	33	66	21	100	67	<PQL	<PQL	<PQL	<PQL	470	700	<PQL	<PQL	<PQL	<PQL	0.1

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
BH1	0.05-0.2	Fill: Sandy Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH1 - Lab replicate	0.05-0.2	Fill: Sandy Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH2	0.05-0.2	Fill: Gravelly Sand	Coarse	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	300	2800	50	85	70	105	20
BH3	0.18-0.3	Fill: Sandy Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH4	0.17-0.3	Fill: Sandy Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH5	0.1-0.2	Silty Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
BH6	0.05-0.2	Fill: Gravelly Sand	Coarse	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	300	2800	50	85	70	105	20
SDUP1	0.05-0.2	Fill: Sandy Clay	Fine	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	1300	5600	65	105	125	45	20
SDUP2	0.05-0.2	Fill: Gravelly Sand	Coarse	NA	NA	NA	100	200	90	1300	35	190	170	180	180	120	300	2800	50	85	70	105	20

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	MW2	MW2 - Lab replicate	MW4	MW4 - Lab replicate	MW6	MW6 - Lab replicate	WDUP1	WDUP2
Inorganic Compounds and Parameters										
pH	-	6.5 - 8.5	**6.3**	NA	**6.5**	NA	**7.3**	NA	NA	NA
Electrical Conductivity (µS/cm)	1	NSL	**6100**	NA	**2800**	NA	**2600**	NA	NA	NA
Turbidity (NTU)	-	NSL	**160**	**160**	**240**	NA	**820**	NA	NA	NA
Redox Potential (Eh)	-	NSL	**194**	NA	**175**	NA	**167**	NA	NA	NA
Total Dissolved Solids (TDS) (mg/L)	5	NSL	**3900**	**3900**	**1600**	NA	**1600**	NA	NA	NA
Total Suspended Solids (TSS) (mg/L)	5	NSL	**120**	NA	**220**	NA	**1100**	NA	NA	NA
Total Organic Carbon (TOC) (mg/L)	1	NSL	**2**	NA	**4**	NA	**2**	NA	NA	NA
Dissolved Oxygen (mg/L)	0.1	NSL	**8.5**	NA	**8.4**	NA	**8.7**	NA	NA	NA
Total Hardness (as CaCO3) (mg/L)	3	NSL	**1400**	**1500**	**420**	NA	**280**	NA	NA	NA
Silica (SiO2) (mg/L)	0.1	NSL	**13**	NA	**12**	NA	**12**	NA	NA	NA
Phosphorus (mg/L)	0.05	NSL	**0.5**	NA	**0.2**	NA	**0.2**	NA	NA	NA
Metals and Metalloids										
Arsenic (As III)	1	24	**9**	**8**	**2**	NA	<1	NA	<1	**10**
Cadmium	0.1	0.2	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1
Chromium (total)	1	3.3	<1	<1	**1**	NA	<1	NA	<1	<1
Copper	1	1.4	**9**	**11**	**4**	NA	<1	NA	<1	**7**
Lead	1	3.4	<1	<1	<1	NA	<1	NA	<1	<1
Total Mercury (inorganic)	0.05	0.06	<0.05	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Nickel	1	11	**72**	**68**	**94**	NA	**32**	NA	**22**	**68**
Zinc	1	8	**88**	**85**	**80**	NA	**59**	NA	**2**	**85**
Aluminium	10	55	<10	<10	<10	NA	<10	NA	NA	NA
Antimony	1	NSL	<1	<1	<1	NA	<1	NA	NA	NA
Barium	1	NSL	<1	<1	<1	NA	<1	NA	NA	NA
Boron	20	940	**60**	**60**	**30**	NA	**30**	NA	NA	NA
Beryllium	0.05	NSL	<0.5	<0.5	<0.5	NA	<0.5	NA	NA	NA
Cobalt	1	NSL	**3500**	**3800**	**130**	NA	**100**	NA	NA	NA
Iron	10	NSL	**11**	**10**	**7**	NA	**3**	NA	NA	NA
Lithium	1	NSL	**370**	**350**	**10**	NA	**690**	NA	NA	NA
Manganese	5	1900	**340**	**330**	**130**	NA	**120**	NA	NA	NA
Molybdenum	1	NSL	**320**	**310**	**240**	NA	**350**	NA	NA	NA
Selenium	1	5	**5**	**4**	**3**	NA	**4**	NA	NA	NA
Silver	1	0.05	<1	<1	<1	NA	<1	NA	NA	NA
Strontium	1	NSL	**2900**	**3100**	**670**	NA	**390**	NA	NA	NA
Uranium	0.5	NSL	**1.1**	**1**	**3.4**	NA	**2.5**	NA	NA	NA
Vanadium	1	NSL	**3**	**2**	**1**	NA	<1	NA	NA	NA
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)										
Benzene	1	950	<1	NA	<1	<1	<1	NA	<1	<1
Toluene	1	180	<1	NA	<1	<1	<1	NA	<1	**3**
Ethylbenzene	1	80	<1	NA	<1	<1	<1	NA	<1	<1
m+p-xylene	2	75	<2	NA	<2	<2	<2	NA	<2	<2
o-xylene	1	350	<1	NA	<1	<1	<1	NA	<1	<1
Total xylenes	2	NSL	<2	NA	<2	<2	<2	NA	<2	<2
Total Recoverable Hydrocarbons (TRHs)										
TRH F1	10	NSL	<10	NA	<10	<10	<10	NA	<10	**13**
TRH F2	50	NSL	<50	NA	<50	NA	<50	NA	<50	<50
TRH F3	100	NSL	<100	<100	<100	NA	<100	NA	<100	<100
TRH F4	100	NSL	<100	<100	<100	NA	<100	NA	<100	<100
Volatile Organic Compounds (VOCs), including chlorinated VOCs										
Dichlorodifluoromethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Chloromethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Vinyl Chloride	10	100	<10	NA	<10	<10	<10	NA	NA	NA
Bromomethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Chloroethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Trichlorofluoromethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
1,1-Dichloroethene	1	700	<1	NA	<1	<1	<1	NA	NA	NA
Trans-1,2-dichloroethene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,1-dichloroethane	1	90	<1	NA	<1	<1	<1	NA	NA	NA
Cis-1,2-dichloroethene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Bromochloromethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Chloroform	1	370	<1	NA	**3**	**2**	<1	NA	NA	NA
2,2-dichloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichloroethane	1	1900	<1	NA	<1	<1	<1	NA	NA	NA
1,1,1-trichloroethane	1	270	<1	NA	<1	<1	<1	NA	NA	NA
1,1-dichloropropene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Cyclohexane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Carbon tetrachloride	1	240	<1	NA	<1	<1	<1	NA	NA	NA
Benzene	1	950	<1	NA	<1	<1	<1	NA	NA	NA
Dibromomethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichloropropane	1	900	<1	NA	<1	<1	<1	NA	NA	NA
Trichloroethene	1	330	<1	NA	<1	<1	<1	NA	NA	NA
Bromodichloromethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
trans-1,3-dichloropropene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
cis-1,3-dichloropropene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,1,2-trichloroethane	1	6500	<1	NA	<1	<1	<1	NA	NA	NA
Toluene	1	180	<1	NA	<1	<1	<1	NA	NA	NA
1,3-dichloropropane	1	1100	<1	NA	<1	<1	<1	NA	NA	NA
Dibromochloromethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dibromoethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Tetrachloroethene	1	70	<1	NA	<1	<1	<1	NA	NA	NA
1,1,1,2-tetrachloroethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Chlorobenzene	1	55	<1	NA	<1	<1	<1	NA	NA	NA
Ethylbenzene	1	80	<1	NA	<1	<1	<1	NA	NA	NA
Bromoform	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
m+p-xylene	2	75	<2	NA	<2	<2	<2	NA	NA	NA
Styrene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,1,2,2-tetrachloroethane	1	400	<1	NA	<1	<1	<1	NA	NA	NA
o-xylene	1	350	<1	NA	<1	<1	<1	NA	NA	NA
1,2,3-trichloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Isopropylbenzene	1	30	<1	NA	<1	<1	<1	NA	NA	NA
Bromobenzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
n-propyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
2-chlorotoluene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
4-chlorotoluene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,3,5-trimethyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Tert-butyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2,4-trimethyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,3-dichlorobenzene	1	260	<1	NA	<1	<1	<1	NA	NA	NA
Sec-butyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,4-dichlorobenzene	1	60	<1	NA	<1	<1	<1	NA	NA	NA
4-isopropyl toluene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichlorobenzene	1	160	<1	NA	<1	<1	<1	NA	NA	NA
n-butyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dibromo-3-chloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2,4-trichlorobenzene	1	85	<1	NA	<1	<1	<1	NA	NA	NA
1,2,3-trichlorobenzene	1	3	<1	NA	<1	<1	<1	NA	NA	NA
Hexachlorobutadiene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	0.2	16	<0.2	NA	<0.2	NA	<0.2	NA	<0.2	<0.1
Acenaphthylene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Acenaphthene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Fluorene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Phenanthrene	0.1	0.6	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Anthracene	0.1	0.01	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Fluoranthene	0.1	1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Pyrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Benzo(a)anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Chrysene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Benzo(b,j+k)fluoranthene	0.2	NSL	<0.2	NA	<0.2	NA	<0.2	NA	<0.2	<0.2
Benzo(a)pyrene	0.1	0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Dibenzo(a,h)anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Benzo(g,h,i)perylene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Anions and Cations										
Calcium (mg/L)	0.5	NSL	**160**	**160**	**50**	NA	**37**	NA	NA	NA
Potassium (mg/L)	0.5	NSL	**29**	**29**	**11**	NA	**12**	NA	NA	NA
Sodium (mg/L)	0.5	NSL	**580**	**590**	**440**	NA	**440**	NA	NA	NA
Magnesium (mg/L)	0.5	NSL	**240**	**260**	**71**	NA	**45**	NA	NA	NA
Hydroxide Alkalinity (as CaCO3) (mg/L)	5	NSL	<5	NA	<5	NA	<5	NA	NA	NA
Bicarbonate Alkalinity (as CaCO3) (mg/L)	5	NSL	**960**	NA	**770**	NA	**1100**	NA	NA	NA
Carbonate Alkalinity (as CaCO3) (mg/L)	5	NSL	<5	NA	<5	NA	<5	NA	NA	NA
Total Alkalinity (as CaCO3) (mg/L)	5	NSL	**960**	NA	**770**	NA	**1100**	NA	NA	NA
Sulphate (mg/L)	1	NSL	**4**	**4**	**81**	NA	**120**	NA	NA	NA
Chloride (mg/L)	1	NSL	**1600**	**1600**	**440**	NA	**200**	NA	NA	NA
Ionic Balance (%)	-	NSL	**-10**	**NA**	**-4**	NA	**-10**	NA	NA	NA
Sodium Adsorption Ratio (SAR)	0.01	NSL	**6.7**	**6.6**	**9.2**	NA	**11**	NA	NA	NA
Nutrients										
Ammonia (mg/L) (pH dependent)	0.005	0.9	**1.3**	NA	**0.1**	NA	**0.13**	NA	NA	NA
Nitrate (mg/L)	0.005	NSL	**0.005**	NA	**0.76**	NA	**1.7**	NA	NA	NA
Nitrite (mg/L)	0.005	NSL	<0.005	NA	**0.047**	NA	**0.11**	NA	NA	NA
Nitrogen Oxides (NOX) (mg/L)	0.005	NSL	**0.008**	NA	**0.81**	NA	**1.8**	NA	NA	NA
Total Nitrogen (mg/L)	0.1	NSL	**1.5**	**1.5**	**0.8**	NA	**2.1**	NA	NA	NA
Phosphate (mg/L)	0.005	NSL	**0.2**	NA	**0.04**	NA	**0.005**	NA	NA	NA
Microbiological Organisms										
Faecal Coliforms (MPN/100mL)	1	NSL	<18	NA	<18	NA	<18	NA	NA	NA
E Coli (MPN/100mL)	1	NSL	<18	NA	<18	NA	<18	NA	NA	NA

Concentration above the SAC	**Bold**
Positive result	**Bold**
GIL >PQL	Red

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)	MW2	MW2 - Lab replicate	MW4	MW4 - Lab replicate	MW6	MW6 - Lab replicate	WDUP1	WDUP2
Inorganic Compounds and Parameters										
pH	-	6.5 - 8.5	6.3	NA	6.5	NA	7.3	NA	NA	NA
Electrical Conductivity (µS/cm)	1	NSL	**6100**	NA	**2800**	NA	**2600**	NA	NA	NA
Turbidity (NTU)	-	NSL	**160**	**160**	**240**	NA	**820**	NA	NA	NA
Redox Potential (Eh)	-	NSL	**194**	NA	**175**	NA	**167**	NA	NA	NA
Total Dissolved Solids (TDS) (mg/L)	5	NSL	**3900**	**3900**	**1600**	NA	**1600**	NA	NA	NA
Total Suspended Solids (TSS) (mg/L)	5	NSL	**120**	NA	**220**	NA	**1100**	NA	NA	NA
Total Organic Carbon (TOC) (mg/L)	1	NSL	**2**	NA	**4**	NA	**2**	NA	NA	NA
Dissolved Oxygen (mg/L)	0.1	NSL	**8.5**	NA	**8.4**	NA	**8.7**	NA	NA	NA
Total Hardness (mg/L)	3	NSL	**1400**	**1500**	**420**	NA	**280**	NA	NA	NA
Silica (SiO2) (mg/L)	0.1	NSL	**13**	NA	**12**	NA	**12**	NA	NA	NA
Phosphorus (mg/L)	0.05	NSL	**0.5**	NA	**0.2**	NA	**0.2**	NA	NA	NA
Metals and Metalloids										
Arsenic (As III)	1	100	**9**	**8**	**2**	NA	<1	NA	<1	**10**
Cadmium	0.1	20	<0.1	<0.1	<0.1	NA	<0.1	NA	<0.1	<0.1
Chromium (total)	1	500	<1	<1	**1**	NA	<1	NA	<1	<1
Copper	1	20000	**9**	**11**	**4**	NA	<1	NA	<1	**7**
Lead	1	100	<1	<1	<1	NA	<1	NA	<1	<1
Total Mercury (inorganic)	0.05	10	<0.05	NA	<0.05	NA	<0.05	<0.05	<0.05	<0.05
Nickel	1	200	**72**	**68**	**94**	NA	**32**	NA	**22**	**68**
Zinc	1	30000	**88**	**85**	**80**	NA	**59**	NA	**2**	**85**
Aluminium	10	NSL	<10	<10	<10	NA	<10	NA	NA	NA
Antimony	1	30	<1	<1	<1	NA	<1	NA	NA	NA
Barium	1	20000	<1	<1	<1	NA	<1	NA	NA	NA
Boron	20	40000	**60**	**60**	**30**	NA	**30**	NA	NA	NA
Beryllium	0.05	600	<0.5	<0.5	<0.5	NA	<0.5	NA	NA	NA
Cobalt	1	NSL	**3500**	**3800**	**130**	NA	**100**	NA	NA	NA
Iron	10	NSL	**11**	**10**	**7**	NA	**3**	NA	NA	NA
Lithium	1	NSL	**370**	**350**	**10**	NA	**690**	NA	NA	NA
Manganese	5	5000	**340**	**330**	**130**	NA	**120**	NA	NA	NA
Molybdenum	1	500	**320**	**310**	**240**	NA	**350**	NA	NA	NA
Selenium	1	100	**5**	**4**	**3**	NA	**4**	NA	NA	NA
Silver	1	1000	<1	<1	<1	NA	<1	NA	NA	NA
Strontium	1	NSL	**2900**	**3100**	**670**	NA	**390**	NA	NA	NA
Uranium	0.5	200	**1.1**	**1**	**3.4**	NA	**2.5**	NA	NA	NA
Vanadium	1	NSL	**3**	**2**	**1**	NA	<1	NA	NA	NA
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)										
Benzene	1	10	<1	NA	<1	<1	<1	NA	<1	<1
Toluene	1	8000	<1	NA	<1	<1	<1	NA	<1	**3**
Ethylbenzene	1	3000	<1	NA	<1	<1	<1	NA	<1	<1
m+p-xylene	2	NSL	<2	NA	<2	<2	<2	NA	<2	<2
o-xylene	1	NSL	<1	NA	<1	<1	<1	NA	<1	<1
Total xylenes	2	6000	<2	NA	<2	<2	<2	NA	<2	<2
Total Recoverable Hydrocarbons (TRHs)										
TRH F1	10	NSL	<10	NA	<10	<10	<10	NA	<10	**13**
TRH F2	50	NSL	<50	NA	<50	NA	<50	NA	<50	<50
TRH F3	100	NSL	<100	<100	<100	NA	<100	NA	<100	<100
TRH F4	100	NSL	<100	<100	<100	NA	<100	NA	<100	<100
Volatile Organic Compounds (VOCs), including chlorinated VOCs										
Dichlorodifluoromethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Chloromethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Vinyl Chloride	10	3	<10	NA	<10	<10	<10	NA	NA	NA
Bromomethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Chloroethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
Trichlorofluoromethane	10	NSL	<10	NA	<10	<10	<10	NA	NA	NA
1,1-Dichloroethene	1	300	<1	NA	<1	<1	<1	NA	NA	NA
Trans-1,2-dichloroethene	1	600	<1	NA	<1	<1	<1	NA	NA	NA
1,1-dichloroethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Cis-1,2-dichloroethene	1	600	<1	NA	<1	<1	<1	NA	NA	NA
Bromochloromethane	1	2500	<1	NA	<1	<1	<1	NA	NA	NA
Chloroform	1		<1	NA	**3**	**2**	<1	NA	NA	NA
2,2-dichloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichloroethane	1	30	<1	NA	<1	<1	<1	NA	NA	NA
1,1,1-trichloroethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,1-dichloropropene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Cyclohexane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Carbon tetrachloride	1	30	<1	NA	<1	<1	<1	NA	NA	NA
Benzene	1	10	<1	NA	<1	<1	<1	NA	NA	NA
Dibromomethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Trichloroethene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Bromodichloromethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
trans-1,3-dichloropropene	1	1000	<1	NA	<1	<1	<1	NA	NA	NA
cis-1,3-dichloropropene	1	1000	<1	NA	<1	<1	<1	NA	NA	NA
1,1,2-trichloroethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Toluene	1	8000	<1	NA	<1	<1	<1	NA	NA	NA
1,3-dichloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Dibromochloromethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dibromoethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Tetrachloroethene	1	500	<1	NA	<1	<1	<1	NA	NA	NA
1,1,1,2-tetrachloroethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Chlorobenzene	1	3000	<1	NA	<1	<1	<1	NA	NA	NA
Ethylbenzene	1	3000	<1	NA	<1	<1	<1	NA	NA	NA
Bromoform	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
m+p-xylene	2	NSL	<2	NA	<2	<2	<2	NA	NA	NA
Styrene	1	300	<1	NA	<1	<1	<1	NA	NA	NA
1,1,2,2-tetrachloroethane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
o-xylene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2,3-trichloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Isopropylbenzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Bromobenzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
n-propyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
2-chlorotoluene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
4-chlorotoluene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,3,5-trimethyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
Tert-butyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2,4-trimethyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,3-dichlorobenzene	1	200	<1	NA	<1	<1	<1	NA	NA	NA
Sec-butyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,4-dichlorobenzene	1	400	<1	NA	<1	<1	<1	NA	NA	NA
4-isopropyl toluene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichlorobenzene	1	15000	<1	NA	<1	<1	<1	NA	NA	NA
n-butyl benzene	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dibromo-3-chloropropane	1	NSL	<1	NA	<1	<1	<1	NA	NA	NA
1,2,4-trichlorobenzene	1	300	<1	NA	<1	<1	<1	NA	NA	NA
1,2,3-trichlorobenzene	1	300	<1	NA	<1	<1	<1	NA	NA	NA
Hexachlorobutadiene	1	7	<1	NA	<1	<1	<1	NA	NA	NA
Polycyclic Aromatic Hydrocarbons (PAHs)										
Naphthalene	0.2	NSL	<0.2	NA	<0.2	NA	<0.2	NA	<0.2	<0.1
Acenaphthylene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Acenaphthene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Fluorene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Phenanthrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Fluoranthene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Pyrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Benzo(a)anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Chrysene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Benzo(b,j+k)fluoranthene	0.2	NSL	<0.2	NA	<0.2	NA	<0.2	NA	<0.2	<0.2
Benzo(a)pyrene	0.1	0.1	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Dibenzo(a,h)anthracene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Benzo(g,h,i)perylene	0.1	NSL	<0.1	NA	<0.1	NA	<0.1	NA	<0.1	<0.1
Anions and Cations										
Calcium (mg/L)	0.5	NSL	**160**	**160**	**50**	NA	**37**	NA	NA	NA
Potassium (mg/L)	0.5	NSL	**29**	**29**	**11**	NA	**12**	NA	NA	NA
Sodium (mg/L)	0.5	NSL	**580**	**590**	**440**	NA	**440**	NA	NA	NA
Magnesium (mg/L)	0.5	NSL	**240**	**260**	**71**	NA	**45**	NA	NA	NA
Hydroxide Alkalinity (as CaCO3) (mg/L)	5	NSL	<5	NA	<5	NA	<5	NA	NA	NA
Bicarbonate Alkalinity (as CaCO3) (mg/L)	5	NSL	**960**	NA	**770**	NA	**1100**	NA	NA	NA
Carbonate Alkalinity (as CaCO3) (mg/L)	5	NSL	<5	NA	<5	NA	<5	NA	NA	NA
Total Alkalinity (as CaCO3) (mg/L)	5	NSL	**960**	NA	**770**	NA	**1100**	NA	NA	NA
Sulphate (mg/L)	1	NSL	**4**	**4**	**81**	NA	**120**	NA	NA	NA
Chloride (mg/L)	1	NSL	**1600**	**1600**	**440**	NA	**200**	NA	NA	NA
Ionic Balance (%)	-	NSL	**-10**	**NA**	**-4**	NA	**-10**	NA	NA	NA
Sodium Adsorption Ratio (SAR)	0.01	NSL	**6.7**	**6.6**	**9.2**	NA	**11**	NA	NA	NA
Nutrients										
Ammonia (mg/L) (pH dependent)	0.005	NSL	**1.3**	NA	**0.1**	NA	**0.13**	NA	NA	NA
Nitrate (mg/L)	0.005	500000	**0.005**	NA	**0.76**	NA	**1.7**	NA	NA	NA
Nitrite (mg/L)	0.005	30000	<0.005	NA	**0.047**	NA	**0.11**	NA	NA	NA
Nitrogen Oxides (NOX) (mg/L)	0.005	NSL	**0.008**	NA	**0.81**	NA	**1.8**	NA	NA	NA
Total Nitrogen (mg/L)	0.1	NSL	**1.5**	**1.5**	**0.8**	NA	**2.1**	NA	NA	NA
Phosphate (mg/L)	0.005	NSL	**0.2**	NA	**0.04**	NA	**0.005**	NA	NA	NA
Microbiological Organisms										
Faecal Coliforms (MPN/100mL)	1	NA	<18	NA	<18	NA	<18	NA	NA	NA
E Coli (MPN/100mL)	1	NA	<18	NA	<18	NA	<18	NA	NA	NA

Concentration above the SAC	**Bold**
Positive result	**Bold**
GIL >PQL	Red

TABLE G3
GROUNDWATER LABORATORY RESULTS COMPARED TO HSLs
All data in µg/L unless stated otherwise

				C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services				10	50	1	1	1	2	1	
NEPM 2013 - Land Use Category				HSL-D: COMMERCIAL/INDUSTRIAL							
Sample Reference	**Water Depth**	**Depth Category**	**Soil Category**								
MW2	5.73	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	0.6
MW2 - Lab replicate	5.73	2m to <4m	Sand	NA	NA	NA	NA	NA	NA	NA	0.6
MW4	4.35	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	357
MW4 - Lab replicate	4.35	2m to <4m	Sand	<10	NA	<1	<1	<1	<2	<1	357
MW6	5.11	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	5.3
MW6 - Lab replicate	5.11	2m to <4m	Sand	NA	NA	NA	NA	NA	NA	NA	5.3
WDUP1	5.11	2m to <4m	Sand	<10	<50	<1	<1	<1	<2	<1	NA
WDUP2	5.73	2m to <4m	Sand	**13**	<50	<1	**3**	<1	<2	<1	NA
Total Number of Samples				6	5	6	6	6	6	6	6
Maximum Value				13	<PQL	<PQL	3	<PQL	<PQL	<PQL	357

Concentration above the SAC **VALUE**
Site specific assesment (SSA) required **VALUE**
Concentration above the PQL **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the Groundwater Assessment Criteria Table below

HSL GROUNDWATER ASSESSMENT CRITERIA

Sample Reference	**Water Depth**	**Depth Category**	**Soil Category**	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
MW2	5.73	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
MW2 - Lab replicate	5.73	2m to <4m	Sand	NA	NA	NA	NA	NA	NA	NA
MW4	4.35	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
MW4 - Lab replicate	4.35	2m to <4m	Sand	6000	NA	5000	NL	NL	NL	NL
MW6	5.11	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
MW6 - Lab replicate	5.11	2m to <4m	Sand	NA	NA	NA	NA	NA	NA	NA
WDUP1	5.11	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL
WDUP2	5.73	2m to <4m	Sand	6000	NL	5000	NL	NL	NL	NL

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TABLE G4
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							
					MW2	MW2 - Lab replicate	MW4	MW4 - Lab replicate	MW6	MW6 - Lab replicate	WDUP1	WDUP2
Total Recoverable Hydrocarbons (TRH)												
C_6-C_9 Aliphatics (assessed using F1)	10	-	100	-	<10	NA	<10	<10	<10	NA	<10	**13**
>C_9-C_{14} Aliphatics (assessed using F2)	50	-	100	-	<50	NA	<50	NA	<50	NA	<50	<50
Monocyclic Aromatic Hydrocarbons (BTEX Compounds)												
Benzene	1	1	-	-	<1	NA	<1	<1	<1	NA	<1	<1
Toluene	1	800	-	-	<1	NA	<1	<1	<1	NA	<1	**3**
Ethylbenzene	1	300	-	-	<1	NA	<1	<1	<1	NA	<1	<1
Total xylenes	2	600	-	-	<2	NA	<2	<2	<2	NA	<2	<2
Polycyclic Aromatic Hydrocarbons (PAHs)												
Naphthalene	1	-	-	6.1	<1	NA	<1	<1	<1	NA	<1	<1
Volatile Organic Compounds (VOCs), including chlorinated VOCs												
Dichlorodifluoromethane	10	-	-	-	<10	NA	<10	<10	<10	NA	NA	NA
Chloromethane	10	-	-	-	<10	NA	<10	<10	<10	NA	NA	NA
Vinyl Chloride	10	0.3	-	-	<10	NA	<10	<10	<10	NA	NA	NA
Bromomethane	10	-	-	-	<10	NA	<10	<10	<10	NA	NA	NA
Chloroethane	10	-	-	-	<10	NA	<10	<10	<10	NA	NA	NA
Trichlorofluoromethane	10	-	-	-	<10	NA	<10	<10	<10	NA	NA	NA
1,1-Dichloroethene	1	30	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Trans-1,2-dichloroethene	1	60	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,1-dichloroethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Cis-1,2-dichloroethene	1	60	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Bromochloromethane	1	250	-	-	<1	NA	**<1**	**<1**	<1	NA	NA	NA
Chloroform	1		-	-	<1	NA	**3**	**2**	<1	NA	NA	NA
2,2-dichloropropane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichloroethane	1	3	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,1,1-trichloroethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,1-dichloropropene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Cyclohexane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Carbon tetrachloride	1	3	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Benzene	1	1	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Dibromomethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichloropropane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Trichloroethene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Bromodichloromethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
trans-1,3-dichloropropene	1	100	-	-	<1	NA	<1	<1	<1	NA	NA	NA
cis-1,3-dichloropropene	1	100	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,1,2-trichloroethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Toluene	1	800	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,3-dichloropropane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Dibromochloromethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dibromoethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Tetrachloroethene	1	50	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,1,1,2-tetrachloroethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Chlorobenzene	1	300	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Ethylbenzene	1	300	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Bromoform	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
m+p-xylene	2	-	-	-	<2	NA	<2	<2	<2	NA	NA	NA
Styrene	1	30	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,1,2,2-tetrachloroethane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
o-xylene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2,3-trichloropropane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Isopropylbenzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Bromobenzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
n-propyl benzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
2-chlorotoluene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
4-chlorotoluene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,3,5-trimethyl benzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Tert-butyl benzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2,4-trimethyl benzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,3-dichlorobenzene	1	20	-	-	<1	NA	<1	<1	<1	NA	NA	NA
Sec-butyl benzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,4-dichlorobenzene	1	40	-	-	<1	NA	<1	<1	<1	NA	NA	NA
4-isopropyl toluene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dichlorobenzene	1	1500	-	-	<1	NA	<1	<1	<1	NA	NA	NA
n-butyl benzene	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2-dibromo-3-chloropropane	1	-	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2,4-trichlorobenzene	1	30	-	-	<1	NA	<1	<1	<1	NA	NA	NA
1,2,3-trichlorobenzene	1		-	-	<1	NA	<1	<1	<1	NA	NA	NA
Hexachlorobutadiene	1	7	-	-	<1	NA	<1	<1	<1	NA	NA	NA

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

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TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene
	PQL Envirolab SYD		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*
	PQL Envirolab VIC		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1.0*	*2.0*	*1.0*
Intra laboratory duplicate	BH1	0.05-0.2	<25	<50	440	700	<0.2	<0.5	<1	<2	<1
	SDUP1	0.05-0.2	<25	NA	NA	NA	<0.2	<0.5	<1	<2	<1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH3	0.18-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
	SDUP2	0.05-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TB-S1 17-25/07/2023		<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1
Trip Spike	TS-S1 17-25/07/2023		-	-	-	-	80%	82%	82%	82%	83%

			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
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*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*
Intra laboratory duplicate	BH1	0.05-0.2	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	SDUP1	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	0.125	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	120%	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH3	0.18-0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	SDUP2	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TB-S1 17-25/07/2023		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
Trip Spike	TS-S1 17-25/07/2023		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			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
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*
Intra laboratory duplicate	BH1	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP1	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH3	0.18-0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP2	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TB-S1 17-25/07/2023		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trip Spike	TS-S1 17-25/07/2023		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

			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
	PQL Envirolab SYD		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
	PQL Envirolab VIC		*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*4.0*	*0.4*	*1.0*	*1.0*	*1.0*	*0.1*	*1.0*	*1.0*
Intra laboratory duplicate	BH1	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	33	34	4	0.1	73	33
	SDUP1	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<4	<0.4	15	51	4	<0.1	81	37
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	24	42.5	4	0.075	77	35
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	75%	40%	0%	67%	10%	11%
Inter laboratory duplicate	BH3	0.18-0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	12	<0.4	7	50	20	<0.1	25	67
	SDUP2	0.05-0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	<0.4	7	32	13	<0.1	7	51
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	11	nc	7	41	16.5	nc	16	59
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	18%	nc	0%	44%	42%	nc	113%	27%
Field Blank	TB-S1 17-25/07/2023		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4	<0.4	2	<1	2	<0.1	<1	2
Trip Spike	TS-S1 17-25/07/2023		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Result outside of QA/QC acceptance criteria

Rinsate metals results in mg/L

TABLE Q2
GROUNDWATER QA/QC SUMMARY

		TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene
	PQL Envirolab SYD	*10*	*50*	*100*	*100*	*1*	*1*	*1*	*2*	*1*
	PQL Envirolab VIC	*10*	*50*	*100*	*100*	*1.0*	*1.0*	*1.0*	*2.0*	*1.0*
Intra	MW6	<10	<50	<100	<100	<1	<1	<1	<2	<1
laboratory	WDUP1	<10	<50	<100	<100	<1	<1	<1	<2	<1
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	MW2	<10	<50	<100	<100	<1	<1	<1	<2	<1
laboratory	WDUP2	16	<50	<100	<100	<1	3	<1	<2	<1
duplicate	MEAN	10.5	nc	nc	nc	nc	1.75	nc	nc	nc
	RPD %	105%	nc	nc	nc	nc	143%	nc	nc	nc
Field	TB-W1	<10	<50	<100	<100	<1	<1	<1	<2	<1
Blank	3/08/2023									
Trip	TS-W1	-	-	-	-	108%	112%	116%	111%	115%
Spike	3/08/2023									

		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
	PQL Envirolab SYD	*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*
	PQL Envirolab VIC	*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*
Intra	MW6	<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
laboratory	WDUP1	<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
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter	MW2	<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
laboratory	WDUP2	<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
duplicate	MEAN	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field	TB-W1	<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
Blank	3/08/2023															
Trip	TS-W1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spike	3/08/2023															

		Arsenic	Cadmium	Chromium VI	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD	*1*	*0.1*	*1*	*1*	*1*	*0.05*	*1*	*1*
	PQL Envirolab VIC	*1*	*0.1*	*1*	*1*	*1*	*0.05*	*1*	*1*
Intra	MW6	<1	<0.1	<1	<1	<1	<0.05	32	59
laboratory	WDUP1	<1	<0.1	<1	<1	<1	<0.05	22	2
duplicate	MEAN	nc	nc	nc	nc	nc	nc	27	30.5
	RPD %	nc	nc	nc	nc	nc	nc	37%	187%
Inter	MW2	9	<0.1	<1	9	<1	<0.05	72	88
laboratory	WDUP2	10	<0.1	<1	7	<1	<0.05	68	85
duplicate	MEAN	9.5	nc	nc	8	nc	nc	70	86.5
	RPD %	11%	nc	nc	25%	nc	nc	6%	3%
Field	TB-W1	<1	<0.1	<1	<1	<1	<0.05	20	3
Blank	3/08/2023								
Trip	TS-W1	-	-	-	-	-	-	-	
Spike	3/08/2023								

Result outside of QA/QC acceptance criteria Value

Appendix D: Borehole Logs

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH101** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 20/6/24 **Datum:** -
Plant Type: EZIPROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 160mm.t				
	■		■						-	FILL: Silty gravelly clay, low to medium plasticity, brown and orange brown, fine to coarse grained, sub-angular siltstone gravel.	w<PL			INSUFFICIENT RETURN FOR BULK SCREEN
										END OF BOREHOLE AT 0.3m				REFUSAL ON INFERRED SILTSTONE BEDROCK
							0.5							
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH102** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 19/6/24 **Datum:** -

Plant Type: - **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 180mm.t				
									-	FILL: Silty clay, low to medium plasticity, brown and orange brown, trace of ironstone gravel and sand.	w≈PL			INSUFFICIENT RETURN FOR BULK SCREEN
									CL-CI	Silty CLAY: low to medium plasticity, grey and orange brown, trace of ironstone gravel, siltstone bands and sand.	w≈PL			RESIDUAL
							0.5			END OF BOREHOLE AT 0.5m				REFUSAL ON INFERRED SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH103** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 22/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 220mm.t				
	■		■						-	FILL: Silty clay, low to medium plasticity, brown, trace of siltstone gravel and sand.	w<PL			INSUFFICIENT RETURN FOR BULK SCREEN
							0.5			END OF BOREHOLE AT 0.4m				REFUSAL ON INFERRED SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH104** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 22/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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				
									-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey and brown, with iron indurated bands.	XW			ASHFIELD SHALE
							0.5			END OF BOREHOLE AT 0.4m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH105** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: EZIPROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	Samples (ES / ASS / ASB / SAL / 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			ASPHALTIC CONCRETE: 80mm.t				
					-	FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained, sub-angular igneous gravel, trace of asphalt fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
			0.5			FILL: Silty clay, medium to high plasticity, brown, orange brown and grey, trace of igneous, ironstone and siltstone gravel.	w<PL			SCREEN: 2.79kg (<10L) 0.2-0.6m, NO FCF
			1		CI-CH	Silty CLAY: medium to high plasticity, red brown mottled grey.	w<PL			RESIDUAL
			1.5			END OF BOREHOLE AT 1.4m				
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH106** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 19/6/24 **Datum:** -

Plant Type: EZIPROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	Samples (ES, ASS, ASB, SAL, 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			ASPHALTIC CONCRETE: 40mm.t				
					-	FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained, sub-angular igneous gravel, trace of asphalt fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
			0.5			FILL: Silty clay, medium to high plasticity, brown, red brown and grey, trace of ironstone and siltstone gravel.	w<PL			SCREEN: 7.38kg (<10L) 0.1-1.3m, NO FCF
			1.5		CL-CI	Silty CLAY: low to medium plasticity, grey mottled red.	w<PL			RESIDUAL
			2		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey and brown, with iron indurated bands.	XW			ASHFIELD SHALE
			2.5			END OF BOREHOLE AT 2.2m				
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH107**

1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 20/6/24 **Datum:** -

Plant Type: EZIPROBE **Logged/Checked by:** A.D./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: 160mm.t				
	■		■						-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, brown and grey, with iron indurated bands.	XW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.3m				
							0.5							
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No.
BH108
1/1

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: - **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 160mm.t				
	■		■		■				-	FILL: Silty clay, low to medium plasticity, brown and grey, trace of siltstone and ironstone gravel and sand.	w≈PL			SCREEN: 4.37kg (<10L) 0.16-0.35m, NO FCF
										END OF BOREHOLE AT 0.35m				REFUSAL ON INFERRED SILTSTONE BEDROCK
							0.5							
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH109** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 22/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./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: 150mm.t				
	■		■						-	FILL: Clayey sand, fine to medium grained, red brown.	M			INSUFFICIENT RETURN FOR BULK SCREEN
									-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey and brown.	XW			ASHFIELD SHALE
							0.5			END OF BOREHOLE AT 0.4m				REFUSAL ON SILSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH110** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 22/6/24 **Datum:** -
Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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: 150mm.t				
	ES, ASB				-	FILL: Clayey sand, fine to medium grained, red brown.				INSUFFICIENT RETURN FOR BULK SCREEN
			0.5		CI-CH	Silty CLAY: medium to high plasticity, red brown mottled grey.				RESIDUAL
						END OF BOREHOLE AT 0.6				

Depth scale: 1, 1.5, 2, 2.5, 3, 3.5

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH111**
1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: EZIPROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	Samples (ES, ASS, ASB, SAL, 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		-	ASPHALTIC CONCRETE: 20mm.t				
						FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained, sub-angular igneous gravel, trace of asphalt fragments.	M			SCREEN: 4.65kg (<10L) 0.02-0.3m, NO FCF
			0.5			FILL: Silty clay, medium to high plasticity, grey and orange brown, trace of siltstone gravel.	w<PL			SCREEN: 6kg (<10L) 0.3-0.6m, NO FCF
			1		CI-CH	Silty CLAY: medium to high plasticity, red brown mottled grey, trace of root fibres.	w<PL			RESIDUAL
			1.5			END OF BOREHOLE AT 1.4m				
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH112** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: EZIPROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	Samples (ES, ASS, ASB, SAL, 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		-	ASPHALTIC CONCRETE: 20mm.t				
						FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained igneous gravel.	M			INSUFFICIENT RETURN FOR BULK SCREEN
			0.5			FILL: Silty clay, medium to high plasticity, brown, grey and red brown, trace of igneous, ironstone and siltstone gravel.	w<PL			SCREEN: 4.39kg (<10L) 0.2-1.0m, NO FCF
			1							SCREEN: 3kg (<10L) 1.0-1.5m, NO FCF
			1.5							SCREEN: 9.18kg (<10L) 1.5-2.0m, NO FCF
			2							
						END OF BOREHOLE AT 2.2m				REFUSAL ON INFERRED SILTSTONE BEDROCK
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH113** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 20/6/24 **Datum:** -

Plant Type: - **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 160mm.t				
	■		■						-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, brown and grey, with iron indurated bands.	XW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.25m				REFUSAL ON SILTSTONE BEDROCK
							0.5							
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH114** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 22/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 150mm.t				
	■		■						-	FILL: Clayey sand, fine to medium grained, red brown.	M			INSUFFICIENT RETURN FOR BULK SCREEN
									-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey and brown.	XW			ASHFIELD SHALE
							0.5			END OF BOREHOLE AT 0.25m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH115** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 17/6/24 **Datum:** -
Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	Field Tests	Depth (m)	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION		0		CONCRETE: 140mm.t				
			-	FILL: Silty clay, low to medium plasticity, grey and orange brown, with sand, trace of siltstone gravel and cobbles.	w<PL			SCREEN: 4.20kg (<10L) 0.14-0.6m, NO FCF
		0.5	-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey, with iron indurated bands.	XW			ASHFIELD SHALE
		1		END OF BOREHOLE AT 0.9m				REFUSAL ON SILTSTONE BEDROCK
		1.5						
		2						
		2.5						
		3						
		3.5						

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH116**

1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 19/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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		-	ASPHALTIC CONCRETE: 10mm.t	M			
										FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained igneous gravel.				INSUFFICIENT RETURN FOR BULK SCREEN
									CI-CH	Silty CLAY: medium to high plasticity, red brown mottled grey and yellow.	w<PL			RESIDUAL
							0.5							
									-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey and orange brown, with iron indurated bands.	XW			ASHFIELD SHALE
							1							
										END OF BOREHOLE AT 1.4m				
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH117**
1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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		-	ASPHALTIC CONCRETE: 30mm.t				
						FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained, sub-angular igneous gravel.	M			INSUFFICIENT RETURN FOR BULK SCREEN
						FILL: Silty clay, medium to high plasticity, brown, grey and orange brown, trace of ironstone and siltstone gravel, and sand.	w<PL			SCREEN: 5.20kg (<10L) 0.2-1.0m, NO FCF
			1							SCREEN: 9.44kg (<10L) 1.0-1.5m, NO FCF
			2.2			END OF BOREHOLE AT 2.2m				REFUSAL ON INFERRED SILTSTONE BEDROCK

Depth scale: 0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH118** 1/1

SDUP104: 0-0.1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 19/6/24 **Datum:** -

Plant Type: - **Logged/Checked by:** J.T.L./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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 clay, low to medium plasticity, brown, with sandstone and igneous gravel, trace of sand, concrete, slag, tile fragments and root fibres.	w≈PL			GRASS COVER SCREEN: 11.77kg 0-0.1m, NO FCF
			0.5			FILL: Silty clay, low to medium plasticity, orange brown and grey, trace of siltstone gravel.	w≈PL			INSUFFICIENT RETURN FOR BULK SCREEN
					CL-CI	Silty CLAY: low to medium plasticity, brown.	w<PL			RESIDUAL
			1			END OF BOREHOLE AT 0.8m				HAND AUGER REFUSAL ON STIFF CLAY
			1.5							
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH119** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 17/6/24 **Datum:** -
Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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				
									-	SILTSTONE: grey and brown.	DW			ASHFIELD SHALE
							0.5			END OF BOREHOLE AT 0.5m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. BH120 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 17/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	Samples (ES, ASS, ASB, SAL, 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				
	ES, ASB				-	FILL: Clayey sand, fine to medium grained, red brown.	M			INSUFFICIENT RETURN FOR BULK SCREEN
	ES, ASB				-	FILL: Silty clay, low to medium plasticity, grey and brown, trace of siltstone gravel.	w<PL			
			0.5			Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey, with iron indurated bands.	XW			ASHFIELD SHALE
						END OF BOREHOLE AT 0.7m				REFUSAL ON SILTSTONE BEDROCK
			1							
			1.5							
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH121** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A
Date: 18/6/24 **Datum:** -
Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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		-	ASPHALTIC CONCRETE: 20mm.t				
										FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained, sub-angular igneous gravel, trace of asphalt fragments.				INSUFFICIENT RETURN FOR BULK SCREEN
										FILL: Silty clay, medium to high plasticity, grey and brown, trace of ironstone gravel and sand.				SCREEN: 5.14kg (<10L) 0.2-0.5m, NO FCF
							0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey.	XW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.9m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH122** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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			ASPHALTIC CONCRETE: 30mm.t				
					-	FILL: Gravelly sand, fine to medium grained, grey, fine to coarse grained, sub-angular igneous gravel, trace of asphalt fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
			0.5			FILL: Silty clay, low to medium plasticity, grey, brown and orange brown, trace of ironstone and siltstone gravel.	w<PL			SCREEN: 4.58kg (<10L) 0.2-0.8m, NO FCF
			1		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey.	XW			ASHFIELD SHALE
			1.5			END OF BOREHOLE AT 1.4m				
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH123** 1/1

SDUP105: 0-0.1

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: - **Logged/Checked by:** J.T.L./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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 clay, low to medium plasticity, brown, orange and grey, trace of siltstone gravel, roots and root fibres, and ash.	w≈PL			GRASS COVER SCREEN: 7.85kg (<10L) 0-0.1m, NO FCF SCREEN: 3.1kg (<10L) 0.1-0.5m, NO FCF
			0.5			END OF BOREHOLE AT 0.5m				REFUSAL ON INFERRED SILTSTONE BEDROCK
			1							
			1.5							
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH124**

1/1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 17/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 190mm.t				
	■		■						-	FILL: Silty sand, fine to coarse grained, brown, trace of igneous and ironstone gravel.	M			INSUFFICIENT RETURN FOR BULK SCREEN
									-	SILTSTONE: grey, with iron indurated bands.	DW			ASHFIELD SHALE
							0.5			END OF BOREHOLE AT 0.3m				
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH125**

1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 17/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 170mm.t				
									-	FILL: Silty sand, fine to coarse grained, brown, trace of siltstone gravel.	M			INSUFFICIENT RETURN FOR BULK SCREEN
							0.5			FILL: Silty clay, low to medium plasticity, brown, trace of siltstone and ironstone gravel.	w<PL			PUSH TUBE REFUSAL AT 0.65m, AUGER BEYOND
							1			END OF BOREHOLE AT 1.0m				BOREHOLE TERMINATED DUE TO SERVICE
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. BH126 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW | **Method:** PUSH TUBE | **R.L. Surface:** N/A
Date: 18/6/24 | **Datum:** -
Plant Type: EZI PROBE | **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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			ASPHALTIC CONCRETE: 50mm.t				
									-	FILL: Clayey sand, fine to coarse grained, yellow brown and grey, trace of sandstone gravel.	M			SCREEN: 5.55kg (<10L) 0.05-0.4m, NO FCF
							0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey, with iron indurated bands.	XW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.65m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH127** 1/1

Environmental logs are not to be used for geotechnical purposes

SDUP103: 0-0.1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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 sandstone and igneous gravel, clay nodules, plastic fragments, bark, roots and root fibres.	M			MULCH COVER SCREEN: 10.77kg 0-0.3m, NO FCF
			0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey, with iron indurated bands.	XW			ASHFIELD SHALE
			1 1.5 2 2.5 3 3.5			END OF BOREHOLE AT 0.6m				REFUSAL ON SILTSTONE BEDROCK

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ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH128** 1/1

SDUP106: 0-0.1

Client: AV JENNINGS SPV NO25 PTY LTD
Project: PROPOSED MIXED USE DEVELOPMENT
Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A
Date: 19/6/24 **Datum:** -
Plant Type: - **Logged/Checked by:** J.T.L./T.H.

Groundwater Record	Depth (m)	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 siltstone gravel, roots and root fibres.	M			GRASS COVER SCREEN: 6.65kg (<10L) 0-0.1m, NO FCF SCREEN: 5.75kg (<10L) 0.1-0.6m, NO FCF
	0.6		FILL: Silty clay, low to medium plasticity, brown, trace of siltstone gravel.	w≈PL			INSUFFICIENT RETURN FOR BULK SCREEN
	0.7		END OF BOREHOLE AT 0.7m				REFUSAL ON INFERRED SILTSTONE BEDROCK

Depth scale: 0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5

SAMPLES: ES, ASS, ASB, SAL, DB
Field Tests
Graphic Log

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ENVIRONMENTAL LOG

Log No. **BH129**

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW | **Method:** PUSH TUBE | **R.L. Surface:** N/A

Date: 17/6/24 | **Datum:** -

Plant Type: EZI PROBE | **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES: ES	ASS	ASB	SAL	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			ASPHALTIC CONCRETE: 80mm.t				
	■		■						-	FILL: Silty sand, fine to medium grained, brown, trace of igneous gravel and asphalt fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
									-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, brown and grey.	XW			ASHFIELD SHALE
							0.5			END OF BOREHOLE AT 0.5m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH130** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 17/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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			ASPHALTIC CONCRETE: 80mm.t				
									-	FILL: Silty sand, fine to medium grained, brown, trace of siltstone gravel, slag and asphalt fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
							0.5		-	SILTSTONE: grey and brown.	SW-DW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.7m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH131** **1/1**

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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			ASPHALTIC CONCRETE: 60mm.t				
									-	FILL: Silty sand, fine to medium grained, yellow brown and grey, trace of sandstone and siltstone gravel.	M			SCREEN: 1.24kg (<10L) 0.06-0.3m, NO FCF
							0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, brown and grey, with iron indurated bands.	XW			ASHFIELD SHALE
							1			END OF BOREHOLE AT 0.8m				REFUSAL ON SILTSTONE BEDROCK
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH132**

1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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			ASPHALTIC CONCRETE: 30mm.t				
					-	FILL: Silty sand, fine to medium grained, brown and grey, trace of igneous gravel and asphalt fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
					-	FILL: Silty clay, medium to high plasticity, red brown, grey and brown, trace of ironstone and siltstone gravel.	w<PL			
			0.5			Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey and brown, with iron indurated bands.	XW			ASHFIELD SHALE
						END OF BOREHOLE AT 0.65m				REFUSAL ON SILTSTONE BEDROCK
			1							
			1.5							
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH133** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 19/6/24 **Datum:** -

Plant Type: - **Logged/Checked by:** J.T.L./T.H.

Groundwater Record	SAMPLES: ES	ASS	ASB	SAL	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 roots and root fibres.	M			GRASS COVER
										FILL: Silty clay, low to medium plasticity, brown, trace of sandstone and siltstone gravel.	w≈PL			SCREEN: 2.2kg (<10L) 0-0.1m, NO FCF SCREEN: 10.4kg 0.1-0.4m, NO FCF
							0.5			FILL: Silty clay, medium to high plasticity, brown, trace of sandstone and ironstone gravel and sand.	w≈PL			SCREEN: 1.2kg (<10L) 0.4-0.7m, NO FCF
									CI-CH	Silty CLAY: medium to high plasticity, brown.	w<PL			RESIDUAL
										END OF BOREHOLE AT 0.75m				REFUSAL ON INFERRED SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No.
BH134
1/1

Environmental logs are not to be used for geotechnical purposes

SDUP101: 0-0.1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES: ES ASS ASB SAL 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 siltstone and ironstone gravel, bark, root fibres, and ash.	M			LEAF LITTER COVER SCREEN: 10.44kg 0-0.2m, NO FCF SCREEN: 2.70kg (<10L) 0.2-0.4m, NO FCF
			0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, brown and grey.	XW			ASHFIELD SHALE
						END OF BOREHOLE AT 0.7m				REFUSAL ON SILTSTONE BEDROCK
			1							
			1.5							
			2							
			2.5							
			3							
			3.5							

JKEnvironments

ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH135** 1/1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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			ASPHALTIC CONCRETE: 40mm.t				
									-	FILL: Silty clay, low to medium plasticity, brown, orange brown and grey, trace of siltstone gravel and sand.	w<PL			INSUFFICIENT RETURN FOR BULK SCREEN
							0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey.	XW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.6m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

JKEnvironments

ENVIRONMENTAL LOG

Log No. **BH136**

1/1

Environmental logs are not to be used for geotechnical purposes

SDUP102: 0-0.1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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 clay, low to medium plasticity, brown, with fine to medium grained sand, trace of igneous gravel, concrete fragments, bark, roots and root fibres.	w<PL			LEAF LITTER COVER SCREEN: 10.24kg 0-0.2m, NO FCF SCREEN: 1.73kg (<10L) 0.2-0.4m, NO FCF
							0.5		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, brown and grey.	XW			ASHFIELD SHALE
										END OF BOREHOLE AT 0.6m				REFUSAL ON SILTSTONE BEDROCK
							1							
							1.5							
							2							
							2.5							
							3							
							3.5							

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ENVIRONMENTAL LOG

Log No. **BH137** 1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** PUSH TUBE **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: EZI PROBE **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES (ES, ASS, ASB, SAL, 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		-	ASPHALTIC CONCRETE: 30mm.t				
						FILL: Silty sand, fine to medium grained, brown and grey, trace of igneous gravel and concrete fragments.	M			INSUFFICIENT RETURN FOR BULK SCREEN
			0.5		CI-CH	Silty CLAY: medium to high plasticity, grey mottled red and yellow, trace of ironstone gravel.	w≈PL			RESIDUAL
			1		-	Extremely Weathered siltstone: silty CLAY, low to medium plasticity, grey, with iron indurated bands.	XW			ASHFIELD SHALE
			1.5			END OF BOREHOLE AT 1.4m				
			2							
			2.5							
			3							
			3.5							

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ENVIRONMENTAL LOG

Log No. **BH138**

1/1

Environmental logs are not to be used for geotechnical purposes

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: - **Logged/Checked by:** A.D./T.H.

Groundwater Record	SAMPLES ES	ASS	ASB	SAL	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: 180mm.t				
	■		■		■				-	FILL: Silty clay, medium to high plasticity, brown, trace of ironstone and siltstone gravel, sand and concrete fragments.	w<PL			SCREEN: 2.27kg (<10L) 0.18-0.35m, NO FCF
										END OF BOREHOLE AT 0.35m				REFUSAL ON INFERRED SILTSTONE BEDROCK

Depth scale (m): 0, 0.5, 1, 1.5, 2, 2.5, 3, 3.5

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ENVIRONMENTAL LOG

Environmental logs are not to be used for geotechnical purposes

Log No. **BH139** 1/1

Client: AV JENNINGS SPV NO25 PTY LTD

Project: PROPOSED MIXED USE DEVELOPMENT

Location: 1 KELLICAR ROAD, CAMPBELLTOWN, NSW

Job No.: E36120PW **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 18/6/24 **Datum:** -

Plant Type: - **Logged/Checked by:** J.T.L./T.H.

Groundwater Record	SAMPLES ES ASS ASB SAL 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: 180mm.t				
	ES, ASB				-	FILL: Silty sand, fine to medium grained, brown.	M			INSUFFICIENT RETURN FOR BULK SCREEN
	ES				CL-CI	Silty CLAY: low to medium plasticity, brown.	w<PL			RESIDUAL
			0.5			END OF BOREHOLE AT 0.35m				HAND AUGER REFUSAL ON STIFF CLAY
			1							
			1.5							
			2							
			2.5							
			3							
			3.5							

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:

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

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:

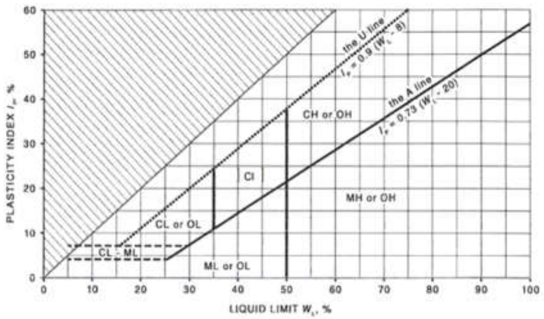
1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

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



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LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record		Standing water level. Time delay following completion of drilling/excavation may be shown.
	C	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 ≈ PL	Moisture content estimated to be approximately equal to plastic limit.
	w < PL	Moisture content estimated to be less than plastic limit.
	w ≈ 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)	Symbol		Density Index (I_D) Range (%)	SPT 'N' Value Range (Blows/300mm)
	VL	VERY LOOSE	≤ 15	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

<table>
<tr><th colspan="2">Term</th><th colspan="2">Abbreviation</th><th>Definition</th></tr>
<tr><td colspan="2">Residual Soil</td><td colspan="2">RS</td><td>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.</td></tr>
<tr><td colspan="2">Extremely Weathered</td><td colspan="2">XW</td><td>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.</td></tr>
<tr><td>Highly Weathered</td><td rowspan="2">Distinctly Weathered (Note 1)</td><td>HW</td><td rowspan="2">DW</td><td>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.</td></tr>
<tr><td>Moderately Weathered</td><td>MW</td><td>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.</td></tr>
<tr><td colspan="2">Slightly Weathered</td><td colspan="2">SW</td><td>Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.</td></tr>
<tr><td colspan="2">Fresh</td><td colspan="2">FR</td><td>Rock shows no sign of decomposition of individual minerals or colour changes.</td></tr>
</table>

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 Reports & COC Documents

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CERTIFICATE OF ANALYSIS 354641

Client Details

Client	JK Environments
Attention	Harley Wang
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E36120PW - Campbelltown**
Number of Samples	92 Soil, 1 Water
Date samples received	21/06/2024
Date completed instructions received	24/06/2024

Analysis Details

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

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

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

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

Report Details

Date results requested by	01/07/2024
Date of Issue	01/07/2024

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Asbestos Approved By
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Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
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Liam Timmins, Organics Supervisor
Loren Bardwell, Development Chemist
Lucy Zhu, Asbestos Supervisor
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-1	354641-2	354641-3	354641-4	354641-7
Your Reference	UNITS	BH101	BH102	BH102	BH105	BH106
Depth		0.16-0.3	0.18-0.3	0.3-0.5	0.08-0.2	0.04-0.2
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	93	84	88	94	87

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-9	354641-10	354641-11	354641-12	354641-15
Your Reference	UNITS	BH106	BH107	BH108	BH111	BH112
Depth		1.3-1.5	0.16-0.3	0.16-0.3	0.02-0.3	0.02-0.2
Sampling Period Dates		19/06/2024	20/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	96	94	92	81

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-17	354641-19	354641-20	354641-21	354641-22
Your Reference	UNITS	BH112	BH113	BH115	BH115	BH116
Depth		1.0-1.4	0.16-0.25	0.14-0.4	0.6-0.9	0.01-0.15
Sampling Period Dates		19/06/2024	20/06/2024	17/06/2024	17/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	87	80	81	83	71

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-24	354641-26	354641-28	354641-31	354641-32
Your Reference	UNITS	BH117	BH117	BH118	BH119	BH120
Depth		0.03-0.2	1.1-1.4	0-0.1	0.2-0.4	0.12-0.2
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	74	87	89	104	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-33	354641-35	354641-38	354641-41	354641-43
Your Reference	UNITS	BH120	BH121	BH122	BH123	BH124
Depth		0.2-0.3	0.02-0.2	0.03-0.2	0-0.1	0.19-0.25
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	79	83	79	79

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-44	354641-46	354641-48	354641-50	354641-53
Your Reference	UNITS	BH125	BH126	BH127	BH128	BH129
Depth		0.17-0.3	0.05-0.4	0-0.1	0-0.1	0.08-0.3
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	97	87	78	90

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-54	354641-56	354641-57	354641-58	354641-61
Your Reference	UNITS	BH130	BH131	BH131	BH132	BH133
Depth		0.1-0.3	0.06-0.3	0.5-0.7	0.03-0.2	0-0.1
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	18/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	77	84	89	83	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-64	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0.7-0.75	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	75	86	74	81	104

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-77	354641-78	354641-79	354641-83	354641-84
Your Reference	UNITS	SDUP101	SDUP102	SDUP103	TB-S101	TB-S102
Depth		-	-	-	-	-
Sampling Period Dates		18/06/2024	18/06/2024	18/06/2024	17/06/2024-20/06/2024	17/06/2024-20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	92	101	90	106	100

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		354641-85	354641-86	354641-88	354641-89	354641-90
Your Reference	UNITS	TS-S101	TS-S102	BH103	BH104	BH109
Depth		-	-	0.22-0.4	0.2-0.4	0.15-0.2
Sampling Period Dates		17/06/2024-20/06/2024	17/06/2024-20/06/2024	-	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	[NA]	[NA]	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	[NA]	[NA]	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	[NA]	[NA]	<25	<25	<25
Benzene	mg/kg	99%	100%	<0.2	<0.2	<0.2
Toluene	mg/kg	100%	97%	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	99%	97%	<1	<1	<1
m+p-xylene	mg/kg	98%	97%	<2	<2	<2
o-Xylene	mg/kg	98%	97%	<1	<1	<1
Naphthalene	mg/kg	[NA]	[NA]	<1	<1	<1
Total +ve Xylenes	mg/kg	[NA]	[NA]	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	101	98	90	92	95

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		354641-91	354641-93
Your Reference	UNITS	BH110	BH114
Depth		0.15-0.2	0.15-0.2
Sampling Period Dates		22/06/2024	22/06/2024
Type of sample		Soil	Soil
Date extracted	-	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	92

svTRH (C10-C40) in Soil						
Our Reference		354641-1	354641-2	354641-3	354641-4	354641-7
Your Reference	UNITS	BH101	BH102	BH102	BH105	BH106
Depth		0.16-0.3	0.18-0.3	0.3-0.5	0.08-0.2	0.04-0.2
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	240	190
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	240	190
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	200	180
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	400	330
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	610	510
Surrogate o-Terphenyl	%	85	86	84	87	85

svTRH (C10-C40) in Soil						
Our Reference		354641-9	354641-10	354641-11	354641-12	354641-15
Your Reference	UNITS	BH106	BH107	BH108	BH111	BH112
Depth		1.3-1.5	0.16-0.3	0.16-0.3	0.02-0.3	0.02-0.2
Sampling Period Dates		19/06/2024	20/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	300
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	300
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	270
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	450
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	720
Surrogate o-Terphenyl	%	81	75	86	89	88

svTRH (C10-C40) in Soil						
Our Reference		354641-17	354641-19	354641-20	354641-21	354641-22
Your Reference	UNITS	BH112	BH113	BH115	BH115	BH116
Depth		1.0-1.4	0.16-0.25	0.14-0.4	0.6-0.9	0.01-0.15
Sampling Period Dates		19/06/2024	20/06/2024	17/06/2024	17/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10}-C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	89	88	88	87	88

svTRH (C10-C40) in Soil						
Our Reference		354641-24	354641-26	354641-28	354641-31	354641-32
Your Reference	UNITS	BH117	BH117	BH118	BH119	BH120
Depth		0.03-0.2	1.1-1.4	0-0.1	0.2-0.4	0.12-0.2
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	180	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	180	<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	170	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	260	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	430	<50	<50	<50	<50
Surrogate o-Terphenyl	%	85	84	88	88	86

svTRH (C10-C40) in Soil						
Our Reference		354641-33	354641-35	354641-38	354641-41	354641-43
Your Reference	UNITS	BH120	BH121	BH122	BH123	BH124
Depth		0.2-0.3	0.02-0.2	0.03-0.2	0-0.1	0.19-0.25
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	140	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	160	190	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	160	320	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	150	260	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	230	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	380	260	<50
Surrogate o-Terphenyl	%	89	84	85	89	85

svTRH (C10-C40) in Soil						
Our Reference		354641-44	354641-46	354641-48	354641-50	354641-53
Your Reference	UNITS	BH125	BH126	BH127	BH128	BH129
Depth		0.17-0.3	0.05-0.4	0-0.1	0-0.1	0.08-0.3
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	160	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	160	<100	200
Total +ve TRH (C10-C36)	mg/kg	<50	<50	320	<50	200
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	240	<100	200
TRH >C_{34} -C_{40}	mg/kg	<100	<100	100	<100	260
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	350	<50	460
Surrogate o-Terphenyl	%	85	85	93	83	85

svTRH (C10-C40) in Soil						
Our Reference		354641-54	354641-56	354641-57	354641-58	354641-61
Your Reference	UNITS	BH130	BH131	BH131	BH132	BH133
Depth		0.1-0.3	0.06-0.3	0.5-0.7	0.03-0.2	0-0.1
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	18/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	160	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	160	<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	130	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	250	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	390	<50
Surrogate o-Terphenyl	%	84	83	85	82	88

svTRH (C10-C40) in Soil						
Our Reference		354641-64	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0.7-0.75	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	170	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	380	<100	<100	260
Total +ve TRH (C10-C36)	mg/kg	<50	550	<50	<50	260
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	410	<100	<100	220
TRH >C_{34} -C_{40}	mg/kg	<100	370	<100	<100	430
Total +ve TRH (>C10-C40)	mg/kg	<50	780	<50	<50	650
Surrogate o-Terphenyl	%	87	87	88	86	82

svTRH (C10-C40) in Soil						
Our Reference		354641-77	354641-78	354641-79	354641-83	354641-84
Your Reference	UNITS	SDUP101	SDUP102	SDUP103	TB-S101	TB-S102
Depth		-	-	-	-	-
Sampling Period Dates		18/06/2024	18/06/2024	18/06/2024	17/06/2024-20/06/2024	17/06/2024-20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	200	<100	150	<100	<100
TRH C_{29} - C_{36}	mg/kg	410	100	130	<100	<100
Total +ve TRH (C10-C36)	mg/kg	600	100	280	<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	460	110	220	<100	<100
TRH >C_{34}-C_{40}	mg/kg	390	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	900	110	220	<50	<50
Surrogate o-Terphenyl	%	88	83	96	87	85

svTRH (C10-C40) in Soil						
Our Reference		354641-88	354641-89	354641-90	354641-91	354641-93
Your Reference	UNITS	BH103	BH104	BH109	BH110	BH114
Depth		0.22-0.4	0.2-0.4	0.15-0.2	0.15-0.2	0.15-0.2
Sampling Period Dates		-	22/06/2024	22/06/2024	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	29/06/2024	29/06/2024	29/06/2024	29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10}-C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10}-C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16}-C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34}-C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	86	84	86	86	85

PAHs in Soil						
Our Reference		354641-1	354641-2	354641-3	354641-4	354641-7
Your Reference	UNITS	BH101	BH102	BH102	BH105	BH106
Depth		0.16-0.3	0.18-0.3	0.3-0.5	0.08-0.2	0.04-0.2
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.06	<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	0.2	<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	%	102	100	103	105	104

PAHs in Soil						
Our Reference		354641-9	354641-10	354641-11	354641-12	354641-15
Your Reference	UNITS	BH106	BH107	BH108	BH111	BH112
Depth		1.3-1.5	0.16-0.3	0.16-0.3	0.02-0.3	0.02-0.2
Sampling Period Dates		19/06/2024	20/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	104	104	103	99	102

PAHs in Soil						
Our Reference		354641-17	354641-19	354641-20	354641-21	354641-22
Your Reference	UNITS	BH112	BH113	BH115	BH115	BH116
Depth		1.0-1.4	0.16-0.25	0.14-0.4	0.6-0.9	0.01-0.15
Sampling Period Dates		19/06/2024	20/06/2024	17/06/2024	17/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	108	104	103	103	101

PAHs in Soil						
Our Reference		354641-24	354641-26	354641-28	354641-31	354641-32
Your Reference	UNITS	BH117	BH117	BH118	BH119	BH120
Depth		0.03-0.2	1.1-1.4	0-0.1	0.2-0.4	0.12-0.2
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.5	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.4	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	3.1	<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	0.6	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	103	106	107	104

PAHs in Soil						
Our Reference		354641-33	354641-35	354641-38	354641-41	354641-43
Your Reference	UNITS	BH120	BH121	BH122	BH123	BH124
Depth		0.2-0.3	0.02-0.2	0.03-0.2	0-0.1	0.19-0.25
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	107	107	107	110	104

PAHs in Soil						
Our Reference		354641-44	354641-46	354641-48	354641-50	354641-53
Your Reference	UNITS	BH125	BH126	BH127	BH128	BH129
Depth		0.17-0.3	0.05-0.4	0-0.1	0-0.1	0.08-0.3
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.3	<0.1	<0.1	<0.1	0.7
Pyrene	mg/kg	0.5	<0.1	<0.1	<0.1	1.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	0.5
Chrysene	mg/kg	0.2	<0.1	<0.1	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	0.4	<0.2	<0.2	<0.2	0.8
Benzo(a)pyrene	mg/kg	0.2	<0.05	<0.05	<0.05	0.53
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3
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	<0.1	<0.1	0.4
Total +ve PAH's	mg/kg	2.3	<0.05	<0.05	<0.05	4.9
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.7
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	0.8
Surrogate p-Terphenyl-d14	%	102	108	113	112	112

PAHs in Soil						
Our Reference		354641-54	354641-56	354641-57	354641-58	354641-61
Your Reference	UNITS	BH130	BH131	BH131	BH132	BH133
Depth		0.1-0.3	0.06-0.3	0.5-0.7	0.03-0.2	0-0.1
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	18/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.3	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	0.1	0.08	<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	1.0	0.2	<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	%	114	112	113	113	114

PAHs in Soil						
Our Reference		354641-64	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0.7-0.75	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
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	0.3
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	1.7
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	%	113	107	107	109	109

PAHs in Soil						
Our Reference		354641-74	354641-75	354641-77	354641-78	354641-79
Your Reference	UNITS	BH138	BH139	SDUP101	SDUP102	SDUP103
Depth		0.18-0.3	0.18-0.23	-	-	-
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.2	<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	0.1	<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	0.5	<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	%	113	105	109	111	114

PAHs in Soil						
Our Reference		354641-83	354641-84	354641-88	354641-89	354641-90
Your Reference	UNITS	TB-S101	TB-S102	BH103	BH104	BH109
Depth		-	-	0.22-0.4	0.2-0.4	0.15-0.2
Sampling Period Dates		17/06/2024-20/06/2024	17/06/2024-20/06/2024	-	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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	0.09	<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	0.4	<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	%	116	110	108	109	110

PAHs in Soil			
Our Reference		354641-91	354641-93
Your Reference	UNITS	BH110	BH114
Depth		0.15-0.2	0.15-0.2
Sampling Period Dates		22/06/2024	22/06/2024
Type of sample		Soil	Soil
Date extracted	-	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024
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	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	108	111

Organochlorine Pesticides in soil						
Our Reference		354641-1	354641-2	354641-4	354641-7	354641-10
Your Reference	UNITS	BH101	BH102	BH105	BH106	BH107
Depth		0.16-0.3	0.18-0.3	0.08-0.2	0.04-0.2	0.16-0.3
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	106	105	106	103	102

Organochlorine Pesticides in soil						
Our Reference		354641-11	354641-12	354641-15	354641-17	354641-19
Your Reference	UNITS	BH108	BH111	BH112	BH112	BH113
Depth		0.16-0.3	0.02-0.3	0.02-0.2	1.0-1.4	0.16-0.25
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	19/06/2024	20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	101	99	102	103	97

Organochlorine Pesticides in soil						
Our Reference		354641-20	354641-22	354641-24	354641-26	354641-28
Your Reference	UNITS	BH115	BH116	BH117	BH117	BH118
Depth		0.14-0.4	0.01-0.15	0.03-0.2	1.1-1.4	0-0.1
Sampling Period Dates		17/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	101	104	105	103	108

Organochlorine Pesticides in soil						
Our Reference		354641-31	354641-32	354641-33	354641-35	354641-38
Your Reference	UNITS	BH119	BH120	BH120	BH121	BH122
Depth		0.2-0.4	0.12-0.2	0.2-0.3	0.02-0.2	0.03-0.2
Sampling Period Dates		17/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	109	105	108	107	105

Organochlorine Pesticides in soil						
Our Reference		354641-41	354641-43	354641-44	354641-46	354641-48
Your Reference	UNITS	BH123	BH124	BH125	BH126	BH127
Depth		0-0.1	0.19-0.25	0.17-0.3	0.05-0.4	0-0.1
Sampling Period Dates		19/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	107	104	102	108	115

Organochlorine Pesticides in soil						
Our Reference		354641-50	354641-53	354641-54	354641-56	354641-58
Your Reference	UNITS	BH128	BH129	BH130	BH131	BH132
Depth		0-0.1	0.08-0.3	0.1-0.3	0.06-0.3	0.03-0.2
Sampling Period Dates		19/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	114	111	112	111	115

Organochlorine Pesticides in soil						
Our Reference		354641-61	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0-0.1	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	115	109	105	109	109

Organochlorine Pesticides in soil						
Our Reference		354641-74	354641-75	354641-77	354641-78	354641-79
Your Reference	UNITS	BH138	BH139	SDUP101	SDUP102	SDUP103
Depth		0.18-0.3	0.18-0.23	-	-	-
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	[NA]	[NA]	[NA]
Surrogate 4-Chloro-3-NBTF	%	107	96	106	108	115

Organochlorine Pesticides in soil						
Our Reference		354641-88	354641-89	354641-90	354641-91	354641-93
Your Reference	UNITS	BH103	BH104	BH109	BH110	BH114
Depth		0.22-0.4	0.2-0.4	0.15-0.2	0.15-0.2	0.15-0.2
Sampling Period Dates		-	22/06/2024	22/06/2024	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	102	102	97	98	95

Organophosphorus Pesticides in Soil						
Our Reference		354641-1	354641-2	354641-4	354641-7	354641-10
Your Reference	UNITS	BH101	BH102	BH105	BH106	BH107
Depth		0.16-0.3	0.18-0.3	0.08-0.2	0.04-0.2	0.16-0.3
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	106	105	106	103	102

Organophosphorus Pesticides in Soil						
Our Reference		354641-11	354641-12	354641-15	354641-17	354641-19
Your Reference	UNITS	BH108	BH111	BH112	BH112	BH113
Depth		0.16-0.3	0.02-0.3	0.02-0.2	1.0-1.4	0.16-0.25
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	19/06/2024	20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	101	99	102	103	97

Organophosphorus Pesticides in Soil						
Our Reference		354641-20	354641-22	354641-24	354641-26	354641-28
Your Reference	UNITS	BH115	BH116	BH117	BH117	BH118
Depth		0.14-0.4	0.01-0.15	0.03-0.2	1.1-1.4	0-0.1
Sampling Period Dates		17/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	101	104	105	103	108

Organophosphorus Pesticides in Soil						
Our Reference		354641-31	354641-32	354641-33	354641-35	354641-38
Your Reference	UNITS	BH119	BH120	BH120	BH121	BH122
Depth		0.2-0.4	0.12-0.2	0.2-0.3	0.02-0.2	0.03-0.2
Sampling Period Dates		17/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	109	105	108	107	105

Organophosphorus Pesticides in Soil						
Our Reference		354641-41	354641-43	354641-44	354641-46	354641-48
Your Reference	UNITS	BH123	BH124	BH125	BH126	BH127
Depth		0-0.1	0.19-0.25	0.17-0.3	0.05-0.4	0-0.1
Sampling Period Dates		19/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	107	104	102	108	115

Organophosphorus Pesticides in Soil						
Our Reference		354641-50	354641-53	354641-54	354641-56	354641-58
Your Reference	UNITS	BH128	BH129	BH130	BH131	BH132
Depth		0-0.1	0.08-0.3	0.1-0.3	0.06-0.3	0.03-0.2
Sampling Period Dates		19/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	114	111	112	111	115

Organophosphorus Pesticides in Soil						
Our Reference		354641-61	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0-0.1	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	115	109	105	109	109

Organophosphorus Pesticides in Soil						
Our Reference		354641-77	354641-78	354641-79	354641-88	354641-89
Your Reference	UNITS	SDUP101	SDUP102	SDUP103	BH103	BH104
Depth		-	-	-	0.22-0.4	0.2-0.4
Sampling Period Dates		18/06/2024	18/06/2024	18/06/2024	-	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	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
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-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
Fenthion	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
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	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
Phosalone	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
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	106	108	115	102	102

Organophosphorus Pesticides in Soil				
Our Reference		354641-90	354641-91	354641-93
Your Reference	UNITS	BH109	BH110	BH114
Depth		0.15-0.2	0.15-0.2	0.15-0.2
Sampling Period Dates		22/06/2024	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	97	98	95

PCBs in Soil						
Our Reference		354641-1	354641-2	354641-4	354641-7	354641-10
Your Reference	UNITS	BH101	BH102	BH105	BH106	BH107
Depth		0.16-0.3	0.18-0.3	0.08-0.2	0.04-0.2	0.16-0.3
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	99	100	99	97	95

PCBs in Soil						
Our Reference		354641-11	354641-12	354641-15	354641-17	354641-19
Your Reference	UNITS	BH108	BH111	BH112	BH112	BH113
Depth		0.16-0.3	0.02-0.3	0.02-0.2	1.0-1.4	0.16-0.25
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	19/06/2024	20/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	96	93	96	96	94

PCBs in Soil						
Our Reference		354641-20	354641-22	354641-24	354641-26	354641-28
Your Reference	UNITS	BH115	BH116	BH117	BH117	BH118
Depth		0.14-0.4	0.01-0.15	0.03-0.2	1.1-1.4	0-0.1
Sampling Period Dates		17/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	94	97	97	94	99

PCBs in Soil						
Our Reference		354641-31	354641-32	354641-33	354641-35	354641-38
Your Reference	UNITS	BH119	BH120	BH120	BH121	BH122
Depth		0.2-0.4	0.12-0.2	0.2-0.3	0.02-0.2	0.03-0.2
Sampling Period Dates		17/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	102	97	98	97	96

PCBs in Soil						
Our Reference		354641-41	354641-43	354641-44	354641-46	354641-48
Your Reference	UNITS	BH123	BH124	BH125	BH126	BH127
Depth		0-0.1	0.19-0.25	0.17-0.3	0.05-0.4	0-0.1
Sampling Period Dates		19/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	100	97	94	100	109

PCBs in Soil						
Our Reference		354641-50	354641-53	354641-54	354641-56	354641-58
Your Reference	UNITS	BH128	BH129	BH130	BH131	BH132
Depth		0-0.1	0.08-0.3	0.1-0.3	0.06-0.3	0.03-0.2
Sampling Period Dates		19/06/2024	17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	105	103	103	103	106

PCBs in Soil						
Our Reference		354641-61	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0-0.1	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	107	103	98	102	102

PCBs in Soil						
Our Reference		354641-77	354641-78	354641-79	354641-88	354641-89
Your Reference	UNITS	SDUP101	SDUP102	SDUP103	BH103	BH104
Depth		-	-	-	0.22-0.4	0.2-0.4
Sampling Period Dates		18/06/2024	18/06/2024	18/06/2024	-	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	102	103	109	98	98

PCBs in Soil				
Our Reference		354641-90	354641-91	354641-93
Your Reference	UNITS	BH109	BH110	BH114
Depth		0.15-0.2	0.15-0.2	0.15-0.2
Sampling Period Dates		22/06/2024	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	01/07/2024	01/07/2024	01/07/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	96	94	93

Acid Extractable metals in soil						
Our Reference		354641-1	354641-2	354641-3	354641-4	354641-7
Your Reference	UNITS	BH101	BH102	BH102	BH105	BH106
Depth		0.16-0.3	0.18-0.3	0.3-0.5	0.08-0.2	0.04-0.2
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	12	7	14	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	17	13	16	13
Copper	mg/kg	43	42	31	81	59
Lead	mg/kg	19	9	14	8	3
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	19	71	20	85	93
Zinc	mg/kg	77	43	36	46	86

Acid Extractable metals in soil						
Our Reference		354641-9	354641-10	354641-11	354641-12	354641-15
Your Reference	UNITS	BH106	BH107	BH108	BH111	BH112
Depth		1.3-1.5	0.16-0.3	0.16-0.3	0.02-0.3	0.02-0.2
Sampling Period Dates		19/06/2024	20/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	5	<4	11	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	3	8	13	14
Copper	mg/kg	15	23	43	52	55
Lead	mg/kg	6	9	19	<1	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	11	3	14	100	77
Zinc	mg/kg	39	28	72	41	33

Acid Extractable metals in soil						
Our Reference		354641-17	354641-19	354641-20	354641-21	354641-22
Your Reference	UNITS	BH112	BH113	BH115	BH115	BH116
Depth		1.0-1.4	0.16-0.25	0.14-0.4	0.6-0.9	0.01-0.15
Sampling Period Dates		19/06/2024	20/06/2024	17/06/2024	17/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	6	11	8	11	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	8	8	5	14
Copper	mg/kg	9	47	24	24	55
Lead	mg/kg	7	17	10	9	<1
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	26	5	4	94
Zinc	mg/kg	8	83	31	30	39

Acid Extractable metals in soil						
Our Reference		354641-24	354641-26	354641-28	354641-31	354641-32
Your Reference	UNITS	BH117	BH117	BH118	BH119	BH120
Depth		0.03-0.2	1.1-1.4	0-0.1	0.2-0.4	0.12-0.2
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	<4	8	12	10	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	15	13	11	9	9
Copper	mg/kg	55	26	45	43	31
Lead	mg/kg	<1	16	62	17	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	92	12	14	25	5
Zinc	mg/kg	40	47	98	81	14

Acid Extractable metals in soil						
Our Reference		354641-33	354641-35	354641-38	354641-41	354641-43
Your Reference	UNITS	BH120	BH121	BH122	BH123	BH124
Depth		0.2-0.3	0.02-0.2	0.03-0.2	0-0.1	0.19-0.25
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	7	<4	<4	7	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	10	11	10	11
Copper	mg/kg	20	41	62	26	41
Lead	mg/kg	35	2	6	20	25
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	75	70	8	11
Zinc	mg/kg	26	32	40	93	52

Acid Extractable metals in soil						
Our Reference		354641-44	354641-46	354641-48	354641-50	354641-53
Your Reference	UNITS	BH125	BH126	BH127	BH128	BH129
Depth		0.17-0.3	0.05-0.4	0-0.1	0-0.1	0.08-0.3
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	4	<4	5	8	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	9	11	15	14
Copper	mg/kg	31	7	30	33	38
Lead	mg/kg	18	12	16	20	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	23	6	23	21	35
Zinc	mg/kg	39	25	170	54	55

Acid Extractable metals in soil						
Our Reference		354641-54	354641-56	354641-57	354641-58	354641-61
Your Reference	UNITS	BH130	BH131	BH131	BH132	BH133
Depth		0.1-0.3	0.06-0.3	0.5-0.7	0.03-0.2	0-0.1
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	18/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	<4	<4	5	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	9	6	14	9
Copper	mg/kg	33	11	50	51	19
Lead	mg/kg	17	12	24	<1	26
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	31	14	10	89	7
Zinc	mg/kg	42	22	95	37	56

Acid Extractable metals in soil						
Our Reference		354641-64	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0.7-0.75	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	14	5	11	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	30	10	10	11	19
Copper	mg/kg	21	28	39	18	28
Lead	mg/kg	16	18	21	23	18
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	17	12	14	9	21
Zinc	mg/kg	30	92	68	59	59

Acid Extractable metals in soil						
Our Reference		354641-74	354641-75	354641-77	354641-78	354641-79
Your Reference	UNITS	BH138	BH139	SDUP101	SDUP102	SDUP103
Depth		0.18-0.3	0.18-0.23	-	-	-
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	9	<4	6	7	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	7	12	16	13
Copper	mg/kg	28	62	30	24	42
Lead	mg/kg	14	4	19	24	21
Mercury	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	18	8	14	17	32
Zinc	mg/kg	41	19	110	63	200

Acid Extractable metals in soil						
Our Reference		354641-83	354641-84	354641-88	354641-89	354641-90
Your Reference	UNITS	TB-S101	TB-S102	BH103	BH104	BH109
Depth		-	-	0.22-0.4	0.2-0.4	0.15-0.2
Sampling Period Dates		17/06/2024-20/06/2024	17/06/2024-20/06/2024	-	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Arsenic	mg/kg	<4	<4	12	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	3	12	6	10
Copper	mg/kg	<1	<1	59	24	18
Lead	mg/kg	3	3	23	16	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	17	8	4
Zinc	mg/kg	4	3	70	44	10

Acid Extractable metals in soil			
Our Reference		354641-91	354641-93
Your Reference	UNITS	BH110	BH114
Depth		0.15-0.2	0.15-0.2
Sampling Period Dates		22/06/2024	22/06/2024
Type of sample		Soil	Soil
Date prepared	-	26/06/2024	26/06/2024
Date analysed	-	28/06/2024	28/06/2024
Arsenic	mg/kg	<4	<4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	9	11
Copper	mg/kg	27	24
Lead	mg/kg	6	6
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	4	4
Zinc	mg/kg	10	10

Moisture						
Our Reference		354641-1	354641-2	354641-3	354641-4	354641-7
Your Reference	UNITS	BH101	BH102	BH102	BH105	BH106
Depth		0.16-0.3	0.18-0.3	0.3-0.5	0.08-0.2	0.04-0.2
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	11	16	17	8.9	1.9

Moisture						
Our Reference		354641-9	354641-10	354641-11	354641-12	354641-15
Your Reference	UNITS	BH106	BH107	BH108	BH111	BH112
Depth		1.3-1.5	0.16-0.3	0.16-0.3	0.02-0.3	0.02-0.2
Sampling Period Dates		19/06/2024	20/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	14	7.6	15	14	7.1

Moisture						
Our Reference		354641-17	354641-19	354641-20	354641-21	354641-22
Your Reference	UNITS	BH112	BH113	BH115	BH115	BH116
Depth		1.0-1.4	0.16-0.25	0.14-0.4	0.6-0.9	0.01-0.15
Sampling Period Dates		19/06/2024	20/06/2024	17/06/2024	17/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	13	17	15	8.5	10

Moisture						
Our Reference		354641-24	354641-26	354641-28	354641-31	354641-32
Your Reference	UNITS	BH117	BH117	BH118	BH119	BH120
Depth		0.03-0.2	1.1-1.4	0-0.1	0.2-0.4	0.12-0.2
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	5.1	11	37	12	8.4

Moisture						
Our Reference		354641-33	354641-35	354641-38	354641-41	354641-43
Your Reference	UNITS	BH120	BH121	BH122	BH123	BH124
Depth		0.2-0.3	0.02-0.2	0.03-0.2	0-0.1	0.19-0.25
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	9.3	11	11	22	12

Moisture						
Our Reference		354641-44	354641-46	354641-48	354641-50	354641-53
Your Reference	UNITS	BH125	BH126	BH127	BH128	BH129
Depth		0.17-0.3	0.05-0.4	0-0.1	0-0.1	0.08-0.3
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	19/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	7.3	8.5	34	8.9	6.9

Moisture						
Our Reference		354641-54	354641-56	354641-57	354641-58	354641-61
Your Reference	UNITS	BH130	BH131	BH131	BH132	BH133
Depth		0.1-0.3	0.06-0.3	0.5-0.7	0.03-0.2	0-0.1
Sampling Period Dates		17/06/2024	18/06/2024	18/06/2024	18/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	8.4	8.1	8.4	5.0	19

Moisture						
Our Reference		354641-64	354641-65	354641-67	354641-69	354641-71
Your Reference	UNITS	BH133	BH134	BH135	BH136	BH137
Depth		0.7-0.75	0-0.1	0.04-0.3	0-0.1	0.03-0.3
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	18	20	27	12	9.9

Moisture						
Our Reference		354641-74	354641-75	354641-77	354641-78	354641-79
Your Reference	UNITS	BH138	BH139	SDUP101	SDUP102	SDUP103
Depth		0.18-0.3	0.18-0.23	-	-	-
Sampling Period Dates		19/06/2024	18/06/2024	18/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	14	11	19	14	31

Moisture						
Our Reference		354641-83	354641-84	354641-88	354641-89	354641-90
Your Reference	UNITS	TB-S101	TB-S102	BH103	BH104	BH109
Depth		-	-	0.22-0.4	0.2-0.4	0.15-0.2
Sampling Period Dates		17/06/2024-20/06/2024	17/06/2024-20/06/2024	-	22/06/2024	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024	27/06/2024	27/06/2024	27/06/2024
Moisture	%	7.4	0.3	19	8.8	14

Moisture			
Our Reference		354641-91	354641-93
Your Reference	UNITS	BH110	BH114
Depth		0.15-0.2	0.15-0.2
Sampling Period Dates		22/06/2024	22/06/2024
Type of sample		Soil	Soil
Date prepared	-	26/06/2024	26/06/2024
Date analysed	-	27/06/2024	27/06/2024
Moisture	%	9.2	13

Asbestos ID - soils NEPM - ASB-001						
Our Reference		354641-1	354641-2	354641-4	354641-7	354641-11
Your Reference	UNITS	BH101	BH102	BH105	BH106	BH108
Depth		0.16-0.3	0.18-0.3	0.08-0.2	0.04-0.2	0.16-0.3
Sampling Period Dates		20/06/2024	19/06/2024	19/06/2024	19/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Sample mass tested	g	639.2	750.33	413.42	810.34	752.24
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001						
Our Reference		354641-12	354641-15	354641-17	354641-20	354641-22
Your Reference	UNITS	BH111	BH112	BH112	BH115	BH116
Depth		0.02-0.3	0.02-0.2	1.0-1.4	0.14-0.4	0.01-0.15
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	19/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Sample mass tested	g	981.92	894.53	438.69	766.11	993.65
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Brown clayey soil & rocks	Brown clayey 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	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001						
Our Reference		354641-24	354641-26	354641-28	354641-32	354641-33
Your Reference	UNITS	BH117	BH117	BH118	BH120	BH120
Depth		0.03-0.2	1.1-1.4	0-0.1	0.12-0.2	0.2-0.3
Sampling Period Dates		19/06/2024	19/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Sample mass tested	g	879.32	675.04	654.09	833.18	439.9
Sample Description	-	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Red fine-grained soil & rocks	Beige clayey soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001						
Our Reference		354641-35	354641-38	354641-41	354641-43	354641-44
Your Reference	UNITS	BH121	BH122	BH123	BH124	BH125
Depth		0.02-0.2	0.03-0.2	0-0.1	0.19-0.25	0.17-0.3
Sampling Period Dates		18/06/2024	18/06/2024	19/06/2024	17/06/2024	17/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Sample mass tested	g	1,006.51	932.55	565.05	766.49	414.26
Sample Description	-	Grey coarse-grained soil & rocks	Grey 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 comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001						
Our Reference		354641-46	354641-48	354641-50	354641-61	354641-65
Your Reference	UNITS	BH126	BH127	BH128	BH133	BH134
Depth		0.05-0.4	0-0.1	0-0.1	0-0.1	0-0.1
Sampling Period Dates		18/06/2024	18/06/2024	19/06/2024	19/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Sample mass tested	g	864.08	397.99	814.45	414.24	451.9
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & debris	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 comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001						
Our Reference		354641-67	354641-69	354641-71	354641-88	354641-90
Your Reference	UNITS	BH135	BH136	BH137	BH103	BH109
Depth		0.04-0.3	0-0.1	0.03-0.3	0.22-0.4	0.15-0.2
Sampling Period Dates		18/06/2024	18/06/2024	18/06/2024	-	22/06/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/07/2024	01/07/2024	01/07/2024	01/07/2024	01/07/2024
Sample mass tested	g	384.26	583.06	609.15	323.96	181.32
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 comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001		
Our Reference		354641-93
Your Reference	UNITS	BH114
Depth		0.15-0.2
Sampling Period Dates		22/06/2024
Type of sample		Soil
Date analysed	-	01/07/2024
Sample mass tested	g	140.34
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos#1	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

vTRH(C6-C10)/BTEXN in Water		
Our Reference		354641-87
Your Reference	UNITS	FR-101-HA
Depth		-
Sampling Period Dates		19/06/2024
Type of sample		Water
Date extracted	-	28/06/2024
Date analysed	-	01/07/2024
TRH C_6 - C_9	µg/L	37
TRH C_6 - C_{10}	µg/L	39
TRH C_6 - C_{10} less BTEX (F1)	µg/L	39
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	%	118
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	88

svTRH (C10-C40) in Water		
Our Reference		354641-87
Your Reference	UNITS	FR-101-HA
Depth		-
Sampling Period Dates		19/06/2024
Type of sample		Water
Date extracted	-	26/06/2024
Date analysed	-	26/06/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	77

PAHs in Water		
Our Reference		354641-87
Your Reference	UNITS	FR-101-HA
Depth		-
Sampling Period Dates		19/06/2024
Type of sample		Water
Date extracted	-	26/06/2024
Date analysed	-	26/06/2024
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
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate p-Terphenyl-d14	%	64

Metals in Waters - Acid extractable		
Our Reference		354641-87
Your Reference	UNITS	FR-101-HA
Depth		-
Sampling Period Dates		19/06/2024
Type of sample		Water
Date prepared	-	26/06/2024
Date analysed	-	28/06/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	0.7
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE[#1] Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE[#2] The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.

Method ID	Methodology Summary
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/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-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date extracted	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			01/07/2024	1	01/07/2024	01/07/2024		01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	101	96
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	101	96
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	100	96
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	97	91
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	97	92
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	106	100
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	99	93
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	95	1	93	86	8	96	89

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date extracted	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	01/07/2024	01/07/2024		01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	15	<25	<25	0	101	93
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	15	<25	<25	0	101	93
Benzene	mg/kg	0.2	Org-023	[NT]	15	<0.2	<0.2	0	102	95
Toluene	mg/kg	0.5	Org-023	[NT]	15	<0.5	<0.5	0	97	89
Ethylbenzene	mg/kg	1	Org-023	[NT]	15	<1	<1	0	97	89
m+p-xylene	mg/kg	2	Org-023	[NT]	15	<2	<2	0	105	97
o-Xylene	mg/kg	1	Org-023	[NT]	15	<1	<1	0	99	91
Naphthalene	mg/kg	1	Org-023	[NT]	15	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	15	81	84	4	96	86

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date extracted	-			[NT]	31	26/06/2024	26/06/2024		28/06/2024	26/06/2024
Date analysed	-			[NT]	31	01/07/2024	01/07/2024		01/07/2024	01/07/2024
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	31	<25	<25	0	105	92
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	31	<25	<25	0	105	92
Benzene	mg/kg	0.2	Org-023	[NT]	31	<0.2	<0.2	0	130	116
Toluene	mg/kg	0.5	Org-023	[NT]	31	<0.5	<0.5	0	113	92
Ethylbenzene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	92	79
m+p-xylene	mg/kg	2	Org-023	[NT]	31	<2	<2	0	94	87
o-Xylene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	95	85
Naphthalene	mg/kg	1	Org-023	[NT]	31	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	31	104	81	25	108	89

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]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	01/07/2024	01/07/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	56	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	56	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	56	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	56	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	56	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	56	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	56	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	56	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	56	84	82	2	[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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	01/07/2024	01/07/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	71	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	71	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	71	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	71	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	71	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	71	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	71	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	71	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	71	104	100	4	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date extracted	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			28/06/2024	1	28/06/2024	28/06/2024		28/06/2024	28/06/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	106	104
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	92	90
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	91
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	106	104
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	92	90
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	91
Surrogate o-Terphenyl	%		Org-020	87	1	85	84	1	81	119

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date extracted	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	29/06/2024	29/06/2024		29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	15	<50	<50	0	113	108
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	15	<100	110	10	97	94
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	15	300	360	18	114	106
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	15	<50	<50	0	113	108
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	15	270	330	20	97	94
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	15	450	540	18	114	106
Surrogate o-Terphenyl	%		Org-020	[NT]	15	88	86	2	127	120

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date extracted	-			[NT]	31	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	31	29/06/2024	29/06/2024		29/06/2024	29/06/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	31	<50	<50	0	108	106
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	94	101
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	86	104
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	31	<50	<50	0	108	106
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	94	101
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	31	<100	<100	0	86	104
Surrogate o-Terphenyl	%		Org-020	[NT]	31	88	87	1	82	86

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	29/06/2024	29/06/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	56	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	56	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	56	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	56	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	56	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	56	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	56	83	83	0	[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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	29/06/2024	29/06/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	71	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	71	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	71	260	250	4	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	71	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	71	220	210	5	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	71	430	410	5	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	71	82	83	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date extracted	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			01/07/2024	1	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	80
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	88	88
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	78
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	82
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	86	85
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	81
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	74	74
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	78	80
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	110	1	102	107	5	97	98

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date extracted	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	80	80
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	82	84
Fluorene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	80	80
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	84	84
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	80	84
Pyrene	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	80	84
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	74	76
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	82	80
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	108	6	96	99

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date extracted	-			[NT]	31	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	31	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	84	80
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	86	84
Fluorene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	82	82
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	86	82
Anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	84	82
Pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	86	90
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	80	76
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	31	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	31	<0.05	<0.05	0	84	81
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	31	107	104	3	103	106

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	01/07/2024	01/07/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	56	0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	56	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	56	0.08	<0.05	46	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	56	112	108	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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	01/07/2024	01/07/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	71	0.3	0.3	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	71	0.3	0.3	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	71	0.2	0.2	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	71	0.1	0.2	67	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	71	0.3	0.4	29	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	71	0.2	0.3	40	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	71	0.1	0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	71	0.2	0.3	40	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	71	109	109	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date extracted	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			01/07/2024	1	01/07/2024	01/07/2024		01/07/2024	01/07/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	78
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	83	84
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	82
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	91	86
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	100	92
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	90	80
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	90
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	80
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	88	72
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	104	70
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	112	1	106	107	1	108	103

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date extracted	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	01/07/2024	01/07/2024		01/07/2024	01/07/2024
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	77	82
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	83	86
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	93	74
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	91	90
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	100	100
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	90	80
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	110	98
Endrin	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	80	74
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	88	86
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	105	64
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	15	102	104	2	98	106

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date extracted	-			[NT]	31	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	31	01/07/2024	01/07/2024		01/07/2024	01/07/2024
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	79	88
HCB	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	83	88
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	94	70
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	94	98
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	102	108
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	94	86
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	113	108
Endrin	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	84	88
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	90	96
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	106	70
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	31	109	106	3	101	108

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	01/07/2024	01/07/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	56	111	111	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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	01/07/2024	01/07/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	71	109	106	3	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date extracted	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			01/07/2024	1	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	91	66
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
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]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-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	82	66
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	83	60
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	83	60
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	72
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	66
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<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	80	74
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	112	1	106	107	1	108	103

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date extracted	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	86	70
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
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]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Parathion-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	84	72
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	85	72
Malathion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	83	60
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	81	80
Fenthion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	90	74
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	80	88
Phosalone	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	15	102	104	2	98	106

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date extracted	-			[NT]	31	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	31	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	86	80
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	87	82
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	84	102
Malathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	87	96
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	82	90
Fenthion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	90	102
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	80	108
Phosalone	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	31	109	106	3	101	108

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	01/07/2024	01/07/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	56	111	111	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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	01/07/2024	01/07/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	71	109	106	3	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date extracted	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			01/07/2024	1	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	91	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	100	1	99	101	2	98	97

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date extracted	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	92	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	15	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	15	96	96	0	95	97

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date extracted	-			[NT]	31	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	31	01/07/2024	01/07/2024		01/07/2024	01/07/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	100	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	31	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	31	102	98	4	100	100

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	01/07/2024	01/07/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	56	103	102	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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	01/07/2024	01/07/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	71	102	99	3	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	354641-2
Date prepared	-			26/06/2024	1	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			28/06/2024	1	28/06/2024	28/06/2024		28/06/2024	28/06/2024
Arsenic	mg/kg	4	Metals-020	<4	1	12	10	18	121	103
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	112	89
Chromium	mg/kg	1	Metals-020	<1	1	8	8	0	125	97
Copper	mg/kg	1	Metals-020	<1	1	43	34	23	115	108
Lead	mg/kg	1	Metals-020	<1	1	19	17	11	120	100
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	106	104
Nickel	mg/kg	1	Metals-020	<1	1	19	17	11	119	89
Zinc	mg/kg	1	Metals-020	<1	1	77	64	18	118	92

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	354641-32
Date prepared	-			[NT]	15	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	15	28/06/2024	28/06/2024		28/06/2024	28/06/2024
Arsenic	mg/kg	4	Metals-020	[NT]	15	<4	<4	0	121	97
Cadmium	mg/kg	0.4	Metals-020	[NT]	15	<0.4	<0.4	0	108	93
Chromium	mg/kg	1	Metals-020	[NT]	15	14	13	7	128	99
Copper	mg/kg	1	Metals-020	[NT]	15	55	78	35	114	100
Lead	mg/kg	1	Metals-020	[NT]	15	2	2	0	110	101
Mercury	mg/kg	0.1	Metals-021	[NT]	15	<0.1	<0.1	0	89	77
Nickel	mg/kg	1	Metals-020	[NT]	15	77	79	3	115	100
Zinc	mg/kg	1	Metals-020	[NT]	15	33	35	6	121	97

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	354641-69
Date prepared	-			[NT]	31	26/06/2024	26/06/2024		26/06/2024	26/06/2024
Date analysed	-			[NT]	31	28/06/2024	28/06/2024		28/06/2024	28/06/2024
Arsenic	mg/kg	4	Metals-020	[NT]	31	10	9	11	125	109
Cadmium	mg/kg	0.4	Metals-020	[NT]	31	<0.4	<0.4	0	109	96
Chromium	mg/kg	1	Metals-020	[NT]	31	9	10	11	125	106
Copper	mg/kg	1	Metals-020	[NT]	31	43	40	7	115	109
Lead	mg/kg	1	Metals-020	[NT]	31	17	16	6	129	107
Mercury	mg/kg	0.1	Metals-021	[NT]	31	<0.1	<0.1	0	108	94
Nickel	mg/kg	1	Metals-020	[NT]	31	25	30	18	116	106
Zinc	mg/kg	1	Metals-020	[NT]	31	81	83	2	119	98

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	56	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	56	28/06/2024	28/06/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	56	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	56	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	56	9	9	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	56	11	8	32	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	56	12	12	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	56	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	56	14	10	33	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	56	22	21	5	[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]	71	26/06/2024	26/06/2024		[NT]	[NT]
Date analysed	-			[NT]	71	28/06/2024	28/06/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	71	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	71	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	71	19	15	24	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	71	28	39	33	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	71	18	19	5	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	71	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	71	21	20	5	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	71	59	53	11	[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	-			28/06/2024	[NT]	[NT]	[NT]	[NT]	28/06/2024	[NT]
Date analysed	-			01/07/2024	[NT]	[NT]	[NT]	[NT]	01/07/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	90	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	85	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	89	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	114	[NT]	[NT]	[NT]	[NT]	106	[NT]
Surrogate Toluene-d8	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	88	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			26/06/2024	[NT]	[NT]	[NT]	[NT]	26/06/2024	[NT]
Date analysed	-			26/06/2024	[NT]	[NT]	[NT]	[NT]	26/06/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	113	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	91	[NT]	[NT]	[NT]	[NT]	119	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			26/06/2024	[NT]	[NT]	[NT]	[NT]	26/06/2024	[NT]
Date analysed	-			26/06/2024	[NT]	[NT]	[NT]	[NT]	26/06/2024	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	[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]	92	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	103	[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]	101	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	101	[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]	78	[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]	110	[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	92	[NT]	[NT]	[NT]	[NT]	118	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			26/06/2024	[NT]	[NT]	[NT]	[NT]	26/06/2024	[NT]
Date analysed	-			28/06/2024	[NT]	[NT]	[NT]	[NT]	28/06/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	107	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	100	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	104	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	118	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	106	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

vTRH & BTEXN in Water NEPM - TRH C6-C9/C6-C10 Results are positive (or in part positive) due to the presence of THMs within the sample.

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.

Note: All samples analysed as received. However, samples 354641-67, 88, 90, 93 are below the minimum recommended 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

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
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SAMPLE RECEIPT ADVICE

Client Details	
Client	JK Environments
Attention	Harley Wang

Sample Login Details	
Your reference	E36120PW - Campbelltown
Envirolab Reference	354641
Date Sample Received	21/06/2024
Date Instructions Received	24/06/2024
Date Results Expected to be Reported	01/07/2024

Sample Condition	
Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	92 Soil, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

sample #88 received as extra sample - Confimred to be bag for sample #53
Updated COC received 24/06/2024 1309
Remaining sample received 24/06/2024 1445

Bag not received for BH110 0.15-0.2 (#91). NEPM Asbestos testing not assigned

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	On Hold
BH101-0.16-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH102-0.18-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH102-0.3-0.5	✓	✓	✓				✓						
BH105-0.08-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH105-0.2-0.5													✓
BH105-0.8-1.0													✓
BH106-0.04-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH106-0.7-1.0													✓
BH106-1.3-1.5	✓	✓	✓				✓						
BH107-0.16-0.3	✓	✓	✓	✓	✓	✓	✓						
BH108-0.16-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH111-0.02-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH111-0.3-0.6													✓
BH111-0.8-1.0													✓
BH112-0.02-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH112-0.4-0.7													✓
BH112-1.0-1.4	✓	✓	✓	✓	✓	✓	✓	✓					
BH112-2.0-2.2													✓
BH113-0.16-0.25	✓	✓	✓	✓	✓	✓	✓						
BH115-0.14-0.4	✓	✓	✓	✓	✓	✓	✓	✓					
BH115-0.6-0.9	✓	✓	✓				✓						
BH116-0.01-0.15	✓	✓	✓	✓	✓	✓	✓	✓					
BH116-0.2-0.3													✓
BH117-0.03-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH117-0.2-0.5													✓
BH117-1.1-1.4	✓	✓	✓	✓	✓	✓	✓	✓					
BH117-1.8-2.0													✓
BH118-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH118-0.4-0.6													✓
BH118-0.7-0.8													✓
BH119-0.2-0.4	✓	✓	✓	✓	✓	✓	✓						
BH120-0.12-0.2	✓	✓	✓	✓	✓	✓	✓	✓					

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	On Hold
BH120-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH120-0.3-0.5													✓
BH121-0.02-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH121-0.2-0.5													✓
BH121-0.8-0.9													✓
BH122-0.03-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH122-0.4-0.8													✓
BH122-0.9-1.1													✓
BH123-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH123-0.3-0.4													✓
BH124-0.19-0.25	✓	✓	✓	✓	✓	✓	✓	✓					
BH125-0.17-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH125-0.3-0.65													✓
BH126-0.05-0.4	✓	✓	✓	✓	✓	✓	✓	✓					
BH126-0.5-0.65													✓
BH127-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH127-0.4-0.55													✓
BH128-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH128-0.4-0.5													✓
BH128-0.6-0.7													✓
BH129-0.08-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH130-0.1-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH130-0.4-0.7													✓
BH131-0.06-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH131-0.5-0.7	✓	✓	✓				✓						
BH132-0.03-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH132-0.2-0.3													✓
BH132-0.3-0.65													✓
BH133-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH133-0.3-0.4													✓
BH133-0.5-0.6													✓
BH133-0.7-0.75	✓	✓	✓				✓						

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	On Hold
BH134-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH134-0.5-0.6													✓
BH135-0.04-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH135-0.4-0.6													✓
BH136-0-0.1	✓	✓	✓	✓	✓	✓	✓	✓					
BH136-0.5-0.6													✓
BH137-0.03-0.3	✓	✓	✓	✓	✓	✓	✓	✓					
BH137-0.4-0.6													✓
BH137-1.0-1.2													✓
BH138-0.18-0.3			✓	✓			✓						
BH139-0.18-0.23			✓	✓			✓						
BH139-0.25-0.35													✓
SDUP101	✓	✓	✓	✓	✓	✓	✓						
SDUP102	✓	✓	✓	✓	✓	✓	✓						
SDUP103	✓	✓	✓	✓	✓	✓	✓						
-													✓
-													✓
-													✓
TB-S101	✓	✓	✓				✓						
TB-S102	✓	✓	✓				✓						
TS-S101	✓												
TS-S102	✓												
FR-101-HA									✓	✓	✓	✓	
BH103-0.22-0.4	✓	✓	✓	✓	✓	✓	✓	✓					
BH104-0.2-0.4	✓	✓	✓	✓	✓	✓	✓						
BH109-0.15-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH110-0.15-0.2	✓	✓	✓	✓	✓	✓	✓						
BH110-0.2-0.6													✓
BH114-0.15-0.2	✓	✓	✓	✓	✓	✓	✓	✓					

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.

Updated COC: 24/06/24 1309

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: E36120PW Date Results Required: STANDARD Page: 1 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
20/06/2024	1	BH101	0.16-0.3	G, A	1	F: Silty Gravelly Clay	X											
19/06/2024	2	BH102	0.18-0.3	G, A	0.6	F: Silty Clay	X											
19/06/2024	3	BH102	0.3-0.5	G, A	1.4	Silty Clay				X								
22/06/2024	~~4~~ 88 TTr	BH103	0.22-0.4	G, A	0.2	F: Silty Clay	X											
22/06/2024	~~5~~ 89 TTr	BH104	0.2-0.4	G	0.2	XW Siltstone		X										
19/06/2024	~~6~~ 4	BH105	0.08-0.2	G, A	1	F: Gravelly Sand	X											
19/06/2024	5	BH105	0.2-0.5	G, A	0.7	F: Silty Clay												
19/06/2024	6	BH105	0.8-1.0	G, A	0.8	Silty Clay												
19/06/2024	7	BH106	0.04-0.2	G, A	0.8	F: Gravelly Sand	X											
19/06/2024	8	BH106	0.7-1.0	G, A	1.3	F: Silty Clay												
19/06/2024	9	BH106	1.3-1.5	G, A	1	Silty Clay				X								
20/06/2024	10	BH107	0.16-0.3	G, A	0.6	XW Siltstone		X										
19/06/2024	11	BH108	0.16-0.3	G, A	0.6	F: Silty Clay	X											
22/06/2024	90 TTr	BH109	0.15-0.2	G, A	0.9	F: Clayey Sand	X											
22/06/2024	91 TTr	BH110	0.15-0.2	G, A	0.2	F: Clayey Sand	X											
22/06/2024	92	BH110	0.2-0.6	G, A	1	Silty Clay												
19/06/2024	12	BH111	0.02-0.3	G, A	0.9	F: Gravelly Sand	X											
19/06/2024	13	BH111	0.3-0.6	G, A	1.7	F: Silty Clay												
19/06/2024	14	BH111	0.8-1.0	G, A	1.1	Silty Clay												
19/06/2024	15	BH112	0.02-0.2	G, A	2	F: Gravelly Sand	X											
19/06/2024	16	BH112	0.4-0.7	G, A	3.1	F: Silty Clay												
19/06/2024	17	BH112	1.0-1.4	G, A	3.4	F: Silty Clay	X											
19/06/2024	18	BH112	2.0-2.2	G, A	2.6	F: Silty Clay												
20/06/2024	19	BH113	0.16-0.25	G, A	1.6	XW Siltstone		X										
22/06/2024	93	BH114	0.15-0.2	G, A	1.1	F: Clayey Sand	X											

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
ENVIROLAB GROUP
Job No: 354641
Date Received: 21/6/24
Time Received: 1510
Received By: DV
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):

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

Relinquished By: HW	Date: 24/06/2024	Time: 12:45pm	Received By:	Date:

SAMPLE AND CHAIN OF CUSTODY FORM

TO:	JKE Job Number: E36120PW	FROM: JKEnvironments
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	Date Results Required: STANDARD Page: 2 of 4	REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown
Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
17/06/2024	20	BH115	0.14-0.4	G, A	0.8	F: Silty Clay	X											
17/06/2024	21	BH115	0.6-0.9	G, A	0.5	XW Siltstone				X								
19/06/2024	22	BH116	0.01-0.15	G, A	0.9	F: Gravelly Sand	X											
19/06/2024	23	BH116	0.2-0.3	G, A	2.2	Silty Clay												
19/06/2024	24	BH117	0.03-0.2	G, A	0.7	F: Gravelly Sand	X											
19/06/2024	25	BH117	0.2-0.5	G, A	3.1	F: Silty Clay												
19/06/2024	26	BH117	1.1-1.4	G, A	2.5	F: Silty Clay	X											
19/06/2024	27	BH117	1.8-2.0	G, A	1.6	F: Silty Clay												
19/06/2024	28	BH118	0-0.1	G, A	1.5	F: Silty Clay	X											
19/06/2024	29	BH118	0.4-0.6	G, A	1.7	F: Silty Clay												
19/06/2024	30	BH118	0.7-0.8	G, A	0.3	Silty Clay												
17/06/2024	31	BH119	0.2-0.4	G	0.3	XW Silstone		X										
17/06/2024	32	BH120	0.12-0.2	G, A	0.5	F: Clayey Sand	X											
17/06/2024	33	BH120	0.2-0.3	G	0.2	F: Silty Clay	X											
17/06/2024	34	BH120	0.3-0.5	G, A	0.4	XW Silstone												
18/06/2024	35	BH121	0.02-0.2	G, A	0.8	F: Gravelly Sand	X											
18/06/2024	36	BH121	0.2-0.5	G, A	0.7	F: Silty Clay												
18/06/2024	37	BH121	0.8-0.9	G	0.4	XW Silstone												
18/06/2024	38	BH122	0.03-0.2	G, A	0.7	F: Gravelly Sand	X											
18/06/2024	39	BH122	0.4-0.8	G, A	1.1	F: Silty Clay												
18/06/2024	40	BH122	0.9-1.1	G	0.3	XW Silstone												
19/06/2024	41	BH123	0-0.1	G, A	1	F: Silty Clay	X											
19/06/2024	42	BH123	0.3-0.4	G, A	0.8	F: Silty Clay												
17/06/2024	43	BH124	0.19-0.25	G, A	0.6	F: Silty Sand	X											
17/06/2024	44	BH125	0.17-0.3	G, A	0.7	F: Silty Sand	X											

354660

Remarks (comments/detection limits required):

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

Relinquished By: HW	Date: 24/06/2024	Time: 12:45pm	Received By:	Date:

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: E36120PW Date Results Required: STANDARD Page: 3 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
17/06/2024	45	BH125	0.3-0.65	G, A	0.5	F: Silty Clay												
18/06/2024	46	BH126	0.05-0.4	G, A	0.8	F: Clayey Sand	X											
18/06/2024	47	BH126	0.5-0.65	G	0.2	XW Siltstone												
18/06/2024	48	BH127	0-0.1	G, A	0.4	F: Silty Sand	X											
18/06/2024	49	BH127	0.4-0.55	G	0.3	XW Siltstone												
19/06/2024	50	BH128	0-0.1	G, A	0.5	F: Silty Sand	X											
19/06/2024	51	BH128	0.4-0.5	G, A	0.9	F: Silty Sand												
19/06/2024	52	BH128	0.6-0.7	G, A	1.5	F: Silty Clay												
17/06/2024	53	BH129	0.08-0.3	G, A	0.4	F: Silty Sand	X											
17/06/2024	54	BH130	0.1-0.3	G	0.5	F: Silty Sand	X											
17/06/2024	55	BH130	0.4-0.7	G	0.3	XW Siltstone												
18/06/2024	56	BH131	0.06-0.3	G	0.4	F: Silty Sand	X											
18/06/2024	57	BH131	0.5-0.7	G	0.3	XW Siltstone				X								
18/06/2024	58	BH132	0.03-0.2	G	0.3	F: Silty Sand	X											
18/06/2024	59	BH132	0.2-0.3	G, A	0.6	F: Silty Clay												
18/06/2024	60	BH132	0.3-0.65	G, A	0.3	XW Siltstone												
19/06/2024	61	BH133	0-0.1	G, A	0.9	F: Silty Sand	X											
19/06/2024	62	BH133	0.3-0.4	G, A	1.1	F: Silty Clay												
19/06/2024	63	BH133	0.5-0.6	G, A	1.1	F: Silty Clay												
19/06/2024	64	BH133	0.7-0.75	G	0.3	Silty Clay				X								
18/06/2024	65	BH134	0-0.1	G, A	0.6	F: Silty Sand	X											
18/06/2024	66	BH134	0.5-0.6	G	0.3	XW Siltstone												
18/06/2024	67	BH135	0.04-0.3	G, A	0.6	F: Silty Clay	X											
18/06/2024	68	BH135	0.4-0.6	G	0.3	XW Siltstone												
18/06/2024	69	BH136	0-0.1	G, A	0.5	F: Silty Clay	X											

354641

Remarks (comments/detection limits required):		Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag		
Relinquished By: HW	Date: 24/06/2024	Time: 12:45pm	Received By:	Date:

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: E36120PW Date Results Required: STANDARD Page: 4 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX	PAHs	Heavy metals (8 metals)	OCP (trace)	Combo 3 (total metals)		
18/06/2024	70	BH136	0.5-0.6	G	0.2	XW Siltstone												
18/06/2024	71	BH137	0.03-0.3	G, A	0.14	F: Silty Sand	X											
18/06/2024	72	BH137	0.4-0.6	G, A	0.6	Silty Clay												
18/06/2024	73	BH137	1.0-1.2	G, A	0.4	XW Siltstone												
19/06/2024	74	BH138	0.18-0.3	G, A	0.6	F: Silty Clay							X	X	X			
18/06/2024	75	BH139	0.18-0.23	G, A	0.8	F: Silty Sand							X	X	X			
18/06/2024	76	BH139	0.25-0.35	G	0.4	Silty Clay												
18/06/2024	77	SDUP101	-	G	NA	Field Duplicate		X										
18/06/2024	78	SDUP102	-	G	NA	Field Duplicate		X										
18/06/2024	79	SDUP103	-	G	NA	Field Duplicate		X										
19/06/2024	80	SDUP104	-	G	NA	Field Duplicate		X			Send to VIC							
19/06/2024	81	SDUP105	-	G	NA	Field Duplicate		X			Send to VIC							
19/06/2024	82	SDUP106	-	G	NA	Field Duplicate		X			Send to VIC							
17-20/06/24	83	TB-S101	-	V	NA	Trip Blank				X								
17-20/06/24	84	TB-S102	-	V	NA	Trip Blank				X								
17-20/06/24	85	TS-S101	-	V	NA	Trip Spike						X						
17-20/06/24	86	TS-S102	-	V	NA	Trip Spike						X						
19/06/2024	87	FR-101-HA	-	#	NA	Water										X		

Remarks (comments/detection limits required):

Send SDUP104 to SDUP106 to Melbourne as inter-lab duplicates

Sample Containers:

G - 250mg Glass Jar A - Ziplock Asbestos Bag V - Vial #2x BTEX, 2x amber, 1x HNO3

354641

Relinquished By: HW	Date: 24/06/2024	Time: 12:45pm	Received By:	Date:

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: E36120PW Date Results Required: STANDARD Page: 1 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX					
20/06/2024	1	BH101	0.16-0.3	G, A	1	F: Silty Gravelly Clay											
19/06/2024	2	BH102	0.18-0.3	G, A	0.6	F: Silty Clay											
19/06/2024	3	BH102	0.3-0.5	G, A	1.4	Silty Clay											
19/06/2024	4	BH105	0.08-0.2	G, A	1	F: Gravelly Sand											
19/06/2024	5	BH105	0.2-0.5	G, A	0.7	F: Silty Clay											
19/06/2024	6	BH105	0.8-1.0	G, A	0.8	Silty Clay											
19/06/2024	7	BH106	0.04-0.2	G, A	0.8	F: Gravelly Sand											
19/06/2024	8	BH106	0.7-1.0	G, A	1.3	F: Silty Clay											
19/06/2024	9	BH106	1.3-1.5	G, A	1	Silty Clay											
20/06/2024	10	BH107	0.16-0.3	G, A	0.6	XW Siltstone											
19/06/2024	11	BH108	0.16-0.3	G, A	0.6	F: Silty Clay											
19/06/2024	12	BH111	0.02-0.3	G, A	0.9	F: Gravelly Sand											
19/06/2024	13	BH111	0.3-0.6	G, A	1.7	F: Silty Clay											
19/06/2024	14	BH111	0.8-1.0	G, A	1.1	Silty Clay											
19/06/2024	15	BH112	0.02-0.2	G, A	2	F: Gravelly Sand											
19/06/2024	16	BH112	0.4-0.7	G, A	3.1	F: Silty Clay											
19/06/2024	17	BH112	1.0-1.4	G, A	3.4	F: Silty Clay											
19/06/2024	18	BH112	2.0-2.2	G, A	2.6	F: Silty Clay											
20/06/2024	19	BH113	0.16-0.25	G, A	1.6	XW Siltstone											
17/06/2024	20	BH115	0.14-0.4	G, A	0.8	F: Silty Clay											
17/06/2024	21	BH115	0.6-0.9	G, A	0.5	XW Siltstone											
19/06/2024	22	BH116	0.01-0.15	G, A	0.9	F: Gravelly Sand											
19/06/2024	23	BH116	0.2-0.3	G, A	2.2	Silty Clay											
19/06/2024	24	BH117	0.03-0.2	G, A	0.7	F: Gravelly Sand											
19/06/2024	25	BH117	0.2-0.5	G, A	3.1	F: Silty Clay											

Scheduling to follow via email

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 354641
Date Received: 21/6/24
Time Received: 1510
Received By: CL
Temp: Cool/Ambient 10°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):

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

Relinquished By:	Date:	Time:	Received By:	Date:
AD	21/06/24	2pm		

SAMPLE AND CHAIN OF CUSTODY FORM

TO:	JKE Job Number: E36120PW	FROM: JKEnvironments
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201	Date Results Required: STANDARD	REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001
Attention: Aileen	Page: 2 of 4	Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
19/06/2024	26	BH117	1.1-1.4	G, A	2.5	F: Silty Clay												
19/06/2024	27	BH117	1.8-2.0	G, A	1.6	F: Silty Clay												
19/06/2024	28	BH118	0-0.1	G, A	1.5	F: Silty Clay												
19/06/2024	29	BH118	0.4-0.6	G, A	1.7	F: Silty Clay			Scheduling to									
19/06/2024	30	BH118	0.7-0.8	G, A	0.3	Silty Clay			follow via									
17/06/2024	31	BH119	0.2-0.4	G	0.3	XW Silstone			email									
17/06/2024	32	BH120	0.12-0.2	G, A	0.5	F: Clayey Sand												
17/06/2024	33	BH120	0.2-0.3	G	0.2	F: Silty Clay												
17/06/2024	34	BH120	0.3-0.5	G, A	0.4	XW Silstone												
18/06/2024	35	BH121	0.02-0.2	G, A	0.8	F: Gravelly Sand												
18/06/2024	36	BH121	0.2-0.5	G, A	0.7	F: Silty Clay												
18/06/2024	37	BH121	0.8-0.9	G	0.4	XW Silstone												
18/06/2024	38	BH122	0.03-0.2	G, A	0.7	F: Gravelly Sand												
18/06/2024	39	BH122	0.4-0.8	G, A	1.1	F: Silty Clay												
18/06/2024	40	BH122	0.9-1.1	G	0.3	XW Silstone												
19/06/2024	41	BH123	0-0.1	G, A	1	F: Silty Clay												
19/06/2024	42	BH123	0.3-0.4	G, A	0.8	F: Silty Clay												
17/06/2024	43	BH124	0.19-0.25	G, A	0.6	F: Silty Sand												
17/06/2024	44	BH125	0.17-0.3	G, A	0.7	F: Silty Sand												
17/06/2024	45	BH125	0.3-0.65	G, A	0.5													
18/06/2024	46	BH126	0.05-0.4	G, A	0.8	F: Clayey Sand												
18/06/2024	47	BH126	0.5-0.65	G	0.2	XW Siltstone												
18/06/2024	48	BH127	0-0.1	G, A	0.4	F: Silty Sand												
18/06/2024	49	BH127	0.4-0.55	G	0.3	XW Siltstone												
19/06/2024	50	BH128	0-0.1	G, A	0.5	F: Silty Sand												

Remarks (comments/detection limits required):

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

Relinquished By:	Date:	Time:	Received By:	Date:
AD	21/06/24	2pm		

SAMPLE AND CHAIN OF CUSTODY FORM

TO:	JKE Job Number: E36120PW	FROM: JKEnvironments
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	Date Results Required: STANDARD Page: 3 of 4	REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX
19/06/2024	51	BH128	0.4-0.5	G, A	0.9	F: Silty Sand						
19/06/2024	52	BH128	0.6-0.7	G, A	1.5	F: Silty Clay						
17/06/2024	53	BH129	0.08-0.3	G, A	0.4	F: Silty Sand						
17/06/2024	54	BH130	0.1-0.3	G	0.5	F: Silty Sand						
17/06/2024	55	BH130	0.4-0.7	G	0.3	XW Siltstone						
18/06/2024	56	BH131	0.06-0.3	G	0.4	F: Silty Sand						
18/06/2024	57	BH131	0.5-0.7	G	0.3	XW Siltstone						
18/06/2024	58	BH132	0.03-0.2	G	0.3	F: Silty Sand						
18/06/2024	59	BH132	0.2-0.3	G, A	0.6	F: Silty Clay						
18/06/2024	60	BH132	0.3-0.65	G, A	0.3	XW Siltstone						
19/06/2024	61	BH133	0-0.1	G, A	0.9	F: Silty Sand						
19/06/2024	62	BH133	0.3-0.4	G, A	1.1	F: Silty Clay						
19/06/2024	63	BH133	0.5-0.6	G, A	1.1	F: Silty Clay						
19/06/2024	64	BH133	0.7-0.75	G	0.3	Silty Clay						
18/06/2024	65	BH134	0-0.1	G, A	0.6	F: Silty Sand						
18/06/2024	66	BH134	0.5-0.6	G	0.3	XW Siltstone						
18/06/2024	67	BH135	0.04-0.3	G, A	0.6	F: Silty Clay						
18/06/2024	68	BH135	0.4-0.6	G	0.3	XW Siltstone						
18/06/2024	69	BH136	0-0.1	G, A	0.5	F: Silty Clay						
18/06/2024	70	BH136	0.5-0.6	G	0.2	XW Siltstone						
18/06/2024	71	BH137	0.03-0.3	G, A	0.14	F: Silty Sand						
18/06/2024	72	BH137	0.4-0.6	G, A	0.6	Silty Clay						
18/06/2024	73	BH137	1.0-1.2	G, A	0.4	XW Siltstone						
19/06/2024	74	BH138	0.18-0.3	G, A	0.6	F: Silty Clay						
18/06/2024	75	BH139	0.18-0.23	G, A	0.8	F: Silty Sand						

Scheduling to follow via email

Remarks (comments/detection limits required):

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

Relinquished By:	Date:	Time:	Received By:	Date:
AD	21/06/24	2pm		

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: E36120PW Date Results Required: STANDARD Page: 4 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD/JTL

Sample Preserved in Esky on Ice

Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
18/06/2024	76	BH139	0.25-0.35	G	0.4	Silty Clay												
18/06/2024	77	SDUP101	-	G	-	Field Duplicate												
18/06/2024	78	SDUP102	-	G	-	Field Duplicate												
18/06/2024	79	SDUP103	-	G	-	Field Duplicate				Scheduling to								
19/06/2024	80	SDUP104	-	G	-	Field Duplicate				follow via								
19/06/2024	81	SDUP105	-	G	-	Field Duplicate				email								
19/06/2024	82	SDUP106	-	G	-	Field Duplicate												
17-20/06/24	83	TB-S101	-	V	-	Trip Blank												
17-20/06/24	84	TB-S102	-	V	-	Trip Blank												
17-20/06/24	85	TS-S101	-	V	-	Trip Spike												
17-20/06/24	86	TS-S102	-	V	-	Trip Spike												
19/06/2024	87	FR-101-HA	-	#	-	Field Rinsate												
	88	BH129 0.3-0.5 - extra			0.W.													

Remarks (comments/detection limits required):

Sample Containers:
G - 250mg Glass Jar A - Ziplock Asbestos Bag V - Vial #2x BTEX, 2x amber, 1x HNO3

Relinquished By:	Date:	Time:	Received By:	Date:
AD	21/06/24	2pm		

RE: ECOC for E36120PW Campbelltown (GW)

,Alexis Diodati <ADiodati@jkenvironments.com.au>
Mon 24/06/2024 13:44
To:Simon Song <SSong@envirolab.com.au>;Harley Wang <HWang@jkenvironments.com.au>;Anna Bui <ABui@envirolab.com.au>;Samplereceipt <Samplereceipt@envirolab.com.au>

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.

Hi Simon,

The sample you received is BH129 0.08-0.3, there shouldn't be a 0.3-0.5 sample.

Apologies for the confusion.

Regards
Alexis Diodati
Environmental Scientist

T: +61 2 9888 5000
D: +61 424 578 006
E: ADiodati@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Simon Song <SSong@envirolab.com.au>
Sent: Monday, 24 June 2024 1:18 PM
To: Harley Wang <HWang@jkenvironments.com.au>; Anna Bui <ABui@envirolab.com.au>; Alexis Diodati <ADiodati@jkenvironments.com.au>; Samplereceipt <Samplereceipt@envirolab.com.au>
Subject: RE: ECOC for E36120PW Campbelltown (GW)

Thanks Harley,

There was an extra bag BH129 0.3-0.5, and we didn't receive bag BH129 0.08-0.3.

Kind Regards,

Simon Song | Senior Customer Service | Envirolab Services

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 354641-A

Client Details

Client	JK Environments
Attention	Harley Wang
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E36120PW - Campbelltown**
Number of Samples	Additional analysis
Date samples received	21/06/2024
Date completed instructions received	02/07/2024

Analysis Details

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

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

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

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

Report Details

Date results requested by	09/07/2024
Date of Issue	09/07/2024
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***	

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Diego Bigolin, Inorganics Supervisor
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

Misc Inorg - Soil				
Our Reference		354641-A-2	354641-A-12	354641-A-58
Your Reference	UNITS	BH102	BH111	BH132
Depth		0.18-0.3	0.02-0.3	0.03-0.2
Sampling Period Dates		19/06/2024	19/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	04/07/2024	04/07/2024	04/07/2024
Date analysed	-	04/07/2024	04/07/2024	04/07/2024
pH 1:5 soil:water	pH Units	8.4	10.6	9.6

CEC				
Our Reference		354641-A-2	354641-A-12	354641-A-58
Your Reference	UNITS	BH102	BH111	BH132
Depth		0.18-0.3	0.02-0.3	0.03-0.2
Sampling Period Dates		19/06/2024	19/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	05/07/2024	05/07/2024	05/07/2024
Date analysed	-	05/07/2024	05/07/2024	05/07/2024
Exchangeable Ca	meq/100g	8.1	31	16
Exchangeable K	meq/100g	0.4	0.4	0.8
Exchangeable Mg	meq/100g	4.2	0.3	2.0
Exchangeable Na	meq/100g	0.5	0.6	2.1
Cation Exchange Capacity	meq/100g	13	32	21

Asbestos ID - soils					
Our Reference		354641-A-53	354641-A-55	354641-A-56	354641-A-59
Your Reference	UNITS	BH129	BH130	BH131	BH132
Depth		0.08-0.3	0.4-0.7	0.06-0.3	0.2-0.3
Sampling Period Dates		17/06/2024	17/06/2024	18/06/2024	18/06/2024
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	09/07/2024	09/07/2024	09/07/2024	09/07/2024
Sample mass tested	g	Approx. 55g	Approx. 55g	Approx. 45g	Approx. 70g
Sample Description	-	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks	Grey coarse-grained soil & rocks
Asbestos ID in soil	-	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
Asbestos comments	-	Nil	Nil	Nil	Nil
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-001	pH - Measured using pH meter and electrode. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.

QUALITY CONTROL: Misc Inorg - Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			04/07/2024	[NT]	[NT]	[NT]	[NT]	04/07/2024	[NT]
Date analysed	-			04/07/2024	[NT]	[NT]	[NT]	[NT]	04/07/2024	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: CEC					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			05/07/2024	[NT]	[NT]	[NT]	[NT]	05/07/2024	[NT]
Date analysed	-			05/07/2024	[NT]	[NT]	[NT]	[NT]	05/07/2024	[NT]
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to ASB-001 asbestos subsampling procedure. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab/MPL recommends supplying 40-60g or 500ml of sample in its own container.

Note: Samples 354641-A-55 & 56 were sub-sampled from jars provided by the client.

Note: Samples 354641-A-53 & 59 were sub-sampled from bags provided by the client.

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	Harley Wang

Sample Login Details	
Your reference	E36120PW - Campbelltown
Envirolab Reference	354641-A
Date Sample Received	21/06/2024
Date Instructions Received	02/07/2024
Date Results Expected to be Reported	09/07/2024

Sample Condition	
Samples received in appropriate condition for analysis	Holding time exceedance
No. of Samples Provided	Additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Holding time exceedance pH

Please contact the laboratory within 24 hours if you wish to cancel the aformentioned testing. Otherwise testing will proceed as per the COC and hence invoiced accordingly.

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	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
BH101-0.16-0.3				✓
BH102-0.18-0.3	✓	✓		
BH102-0.3-0.5				✓
BH105-0.08-0.2				✓
BH105-0.2-0.5				✓
BH105-0.8-1.0				✓
BH106-0.04-0.2				✓
BH106-0.7-1.0				✓
BH106-1.3-1.5				✓
BH107-0.16-0.3				✓
BH108-0.16-0.3				✓
BH111-0.02-0.3	✓	✓		
BH111-0.3-0.6				✓
BH111-0.8-1.0				✓
BH112-0.02-0.2				✓
BH112-0.4-0.7				✓
BH112-1.0-1.4				✓
BH112-2.0-2.2				✓
BH113-0.16-0.25				✓
BH115-0.14-0.4				✓
BH115-0.6-0.9				✓
BH116-0.01-0.15				✓
BH116-0.2-0.3				✓
BH117-0.03-0.2				✓
BH117-0.2-0.5				✓
BH117-1.1-1.4				✓
BH117-1.8-2.0				✓
BH118-0-0.1				✓
BH118-0.4-0.6				✓
BH118-0.7-0.8				✓
BH119-0.2-0.4				✓
BH120-0.12-0.2				✓

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www.envirolab.com.au

Sample ID	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
BH120-0.2-0.3				✓
BH120-0.3-0.5				✓
BH121-0.02-0.2				✓
BH121-0.2-0.5				✓
BH121-0.8-0.9				✓
BH122-0.03-0.2				✓
BH122-0.4-0.8				✓
BH122-0.9-1.1				✓
BH123-0-0.1				✓
BH123-0.3-0.4				✓
BH124-0.19-0.25				✓
BH125-0.17-0.3				✓
BH125-0.3-0.65				✓
BH126-0.05-0.4				✓
BH126-0.5-0.65				✓
BH127-0-0.1				✓
BH127-0.4-0.55				✓
BH128-0-0.1				✓
BH128-0.4-0.5				✓
BH128-0.6-0.7				✓
BH129-0.08-0.3			✓	
BH130-0.1-0.3				✓
BH130-0.4-0.7			✓	
BH131-0.06-0.3			✓	
BH131-0.5-0.7				✓
BH132-0.03-0.2	✓	✓		
BH132-0.2-0.3			✓	
BH132-0.3-0.65				✓
BH133-0-0.1				✓
BH133-0.3-0.4				✓
BH133-0.5-0.6				✓
BH133-0.7-0.75				✓

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www.envirolab.com.au

Sample ID	Misc Inorg - Soil	CEC	Asbestos ID - soils	On Hold
BH134-0-0.1				✓
BH134-0.5-0.6				✓
BH135-0.04-0.3				✓
BH135-0.4-0.6				✓
BH136-0-0.1				✓
BH136-0.5-0.6				✓
BH137-0.03-0.3				✓
BH137-0.4-0.6				✓
BH137-1.0-1.2				✓
BH138-0.18-0.3				✓
BH139-0.18-0.23				✓
BH139-0.25-0.35				✓
SDUP101				✓
SDUP102				✓
SDUP103				✓
-				✓
-				✓
-				✓
TB-S101				✓
TB-S102				✓
TS-S101				✓
TS-S102				✓
FR-101-HA				✓
BH103-0.22-0.4				✓
BH104-0.2-0.4				✓
BH109-0.15-0.2				✓
BH110-0.15-0.2				✓
BH110-0.2-0.6				✓
BH114-0.15-0.2				✓

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.

Anna Bui

From: Harley Wang <HWang@jkenvironments.com.au>
Sent: Tuesday, 2 July 2024 1:19 PM
To: Nick Sarlamis
Cc: Samplereceipt
Subject: RE: Results for Registration 354641 E36120PW - Campbelltown
Attachments: RE: 354641

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.

Hi Nick,

Can I please order the following additional analysis (possibly in the same A job as the additional asbestos AS analysis):

1. pH and cation exchange capacity (CEC) (cmolc/kg) for BH102 (0.18-0.3) sample number: 2;
2. pH and CEC (cmolc/kg) for BH111 (0.02-0.3) sample number: 12; and
3. pH and CEC (cmolc/kg) for BH132 (0.03-0.2) sample number: 58.

In addition, can you please send over the TRH chromatograms and lab interpretations for the following:

- BH112 (0.02-0.2) sample number: 15; and
- BH134 (0-0.1) sample number: 65.

Many thanks!

ELS REF: 354641-A
TAT: STANDARD
DUE: 9/7/24
AB -

Regards
Harley Wang
Senior Environmental Scientist

T: +61 2 9888 5000
D: +61 468 678 416
E: HWang@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Nick Sarlamis <NSarlamis@envirolab.com.au>
Sent: Monday, July 1, 2024 6:37 PM
To: Harley Wang <HWang@jkenvironments.com.au>
Subject: Results for Registration 354641 E36120PW - Campbelltown

This message originated outside the JKG network. If this looks to be from a staff member, it is likely to be malicious (spam/phish attack). Do not click links of open attachments unless you recognise the sender and know the content is safe.

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
an Excel or .csv file containing the results

Anna Bui

From: Harley Wang <HWang@jkenvironments.com.au>
Sent: Tuesday, 2 July 2024 9:27 AM
To: Simon Song
Cc: Samplereceipt
Subject: RE: 354641

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.

Hi Simon,

We do not have 500mL asbestos bags for the below mentioned samples.

Can you please do **40g AS asbestos** from the jars for all four samples.

Thanks.

Regards
Harley Wang
Senior Environmental Scientist

T: +61 2 9888 5000
D: +61 468 678 416
E: HWang@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Simon Song <SSong@envirolab.com.au>
Sent: Monday, July 1, 2024 10:16 AM
To: Harley Wang <HWang@jkenvironments.com.au>
Cc: Samplereceipt <Samplereceipt@envirolab.com.au>
Subject: 354641

This message originated outside the JKG network. If this looks to be from a staff member, it is likely to be malicious (spam/phish attack). Do not click links of open attachments unless you recognise the sender and know the content is safe.

Hi Harley, 53 55 56 59
We didn't receive the NEPM bags of BH129 0.08-0.3, BH130 0.4-0.7, BH131 0.06-0.3 and BH132 0.2-0.3, are you able to find them?

From: Harley Wang <HWang@jkenvironments.com.au>
Sent: Tuesday, June 25, 2024 1:23 PM
To: Simon Song <SSong@envirolab.com.au>
Cc: Samplereceipt <Samplereceipt@envirolab.com.au>
Subject: RE: ECOC for E36120PW Campbelltown (GW)

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CERTIFICATE OF ANALYSIS 354595

Client Details

Client	JK Environments
Attention	Harley Wang
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E36120PW Campbelltown**
Number of Samples	6 Water
Date samples received	21/06/2024
Date completed instructions received	21/06/2024

Analysis Details

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

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

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

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

Report Details

Date results requested by	03/07/2024
Date of Issue	03/07/2024

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Results Approved By
Diego Bigolin, Inorganics Supervisor
Dragana Tomas, Senior Chemist
Loren Bardwell, Development Chemist
Stuart Chen, Asbestos Approved Identifier/Report coordinator
Tabitha Roberts, Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		354595-1	354595-2	354595-3	354595-4	354595-5
Your Reference	UNITS	MW2	MW4	MW6	WDUP101	TB-W101
Date Sampled		21/06/2024	21/06/2024	21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	25/06/2024	25/06/2024	25/06/2024	25/06/2024	25/06/2024
Date analysed	-	26/06/2024	26/06/2024	26/06/2024	26/06/2024	26/06/2024
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	120	119	117	120	114
Surrogate Toluene-d8	%	98	97	96	99	98
Surrogate 4-Bromofluorobenzene	%	95	95	95	95	94

vTRH(C6-C10)/BTEXN in Water		
Our Reference		354595-6
Your Reference	UNITS	TS-W101
Date Sampled		21/06/2024
Type of sample		Water
Date extracted	-	25/06/2024
Date analysed	-	26/06/2024
Benzene	µg/L	119%
Toluene	µg/L	108%
Ethylbenzene	µg/L	111%
m+p-xylene	µg/L	106%
o-xylene	µg/L	102%
Surrogate Dibromofluoromethane	%	108
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	89

svTRH (C10-C40) in Water						
Our Reference		354595-1	354595-2	354595-3	354595-4	354595-5
Your Reference	UNITS	MW2	MW4	MW6	WDUP101	TB-W101
Date Sampled		21/06/2024	21/06/2024	21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	24/06/2024	24/06/2024	24/06/2024	24/06/2024	24/06/2024
Date analysed	-	24/06/2024	24/06/2024	24/06/2024	24/06/2024	24/06/2024
TRH C_{10} - C_{14}	µg/L	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	<100	<100	<100	<100	160
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50	160
TRH >C_{10} - C_{16}	µg/L	<50	<50	<50	<50	150
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50	<50	<50	<50	150
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50	150
Surrogate o-Terphenyl	%	98	102	88	106	76

PAHs in Water						
Our Reference		354595-1	354595-2	354595-3	354595-4	354595-5
Your Reference	UNITS	MW2	MW4	MW6	WDUP101	TB-W101
Date Sampled		21/06/2024	21/06/2024	21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	24/06/2024	24/06/2024	24/06/2024	24/06/2024	24/06/2024
Date analysed	-	25/06/2024	25/06/2024	25/06/2024	25/06/2024	25/06/2024
Naphthalene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<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	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	87	94	86	92	76

OCPs in Water - Trace Level					
Our Reference		354595-1	354595-2	354595-3	354595-4
Your Reference	UNITS	MW2	MW4	MW6	WDUP101
Date Sampled		21/06/2024	21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water	Water
Date extracted	-	24/06/2024	24/06/2024	24/06/2024	24/06/2024
Date analysed	-	25/06/2024	25/06/2024	25/06/2024	25/06/2024
alpha-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
HCB	µg/L	<0.001	<0.001	<0.001	<0.001
beta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
gamma-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
Heptachlor	µg/L	<0.001	<0.001	<0.001	<0.001
delta-BHC	µg/L	<0.001	<0.001	<0.001	<0.001
Aldrin	µg/L	<0.001	<0.001	<0.001	<0.001
Heptachlor Epoxide	µg/L	<0.001	<0.001	<0.001	<0.001
gamma-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001
alpha-Chlordane	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan I	µg/L	<0.002	<0.002	<0.002	<0.002
pp-DDE	µg/L	<0.001	<0.001	<0.001	<0.001
Dieldrin	µg/L	<0.001	<0.001	<0.001	<0.001
Endrin	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan II	µg/L	<0.002	<0.002	<0.002	<0.002
pp-DDD	µg/L	<0.001	<0.001	<0.001	<0.001
Endrin Aldehyde	µg/L	<0.001	<0.001	<0.001	<0.001
pp-DDT	µg/L	<0.001	<0.001	<0.001	<0.001
Endosulfan Sulphate	µg/L	<0.001	<0.001	<0.001	<0.001
Methoxychlor	µg/L	<0.001	<0.001	<0.001	<0.001
Surrogate 4-Chloro-3-NBTF	%	88	90	85	87

HM in water - dissolved					
Our Reference		354595-1	354595-2	354595-3	354595-4
Your Reference	UNITS	MW2	MW4	MW6	WDUP101
Date Sampled		21/06/2024	21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water	Water
Date prepared	-	25/06/2024	25/06/2024	25/06/2024	25/06/2024
Date analysed	-	25/06/2024	25/06/2024	25/06/2024	25/06/2024
Arsenic-Dissolved	µg/L	<1	2	<1	2
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	<1	<1	<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	2	6	<1	6
Zinc-Dissolved	µg/L	6	16	1	16

HM in water - total		
Our Reference		354595-5
Your Reference	UNITS	TB-W101
Date Sampled		21/06/2024
Type of sample		Water
Date prepared	-	25/06/2024
Date analysed	-	25/06/2024
Arsenic-Total	µg/L	<1
Cadmium-Total	µg/L	<0.1
Chromium-Total	µg/L	<1
Copper-Total	µg/L	<1
Lead-Total	µg/L	<1
Mercury-Total	µg/L	<0.05
Nickel-Total	µg/L	<1
Zinc-Total	µg/L	<1

Miscellaneous Inorganics				
Our Reference		354595-1	354595-2	354595-3
Your Reference	UNITS	MW2	MW4	MW6
Date Sampled		21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water
Date prepared	-	21/06/2024	21/06/2024	21/06/2024
Date analysed	-	21/06/2024	21/06/2024	21/06/2024
pH	pH Units	7.1	6.9	7.2
Electrical Conductivity	µS/cm	2,800	3,900	2,200

Miscellaneous LC					
Our Reference		354595-1	354595-2	354595-3	354595-4
Your Reference	UNITS	MW2	MW4	MW6	WDUP101
Date Sampled		21/06/2024	21/06/2024	21/06/2024	21/06/2024
Type of sample		Water	Water	Water	Water
Date prepared	-	28/06/2024	28/06/2024	28/06/2024	28/06/2024
Date analysed	-	03/07/2024	03/07/2024	03/07/2024	03/07/2024
Imidacloprid	ng/L	<50	300	<50	410
Surrogate Terbuthlazine-d5	% recovery	106	80	98	96

Method ID	Methodology Summary
Ext-054	Analysed by MPL Envirolab
Inorg-001	pH - Measured using pH meter and electrode. 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.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Salt forms (e.g. FeO, PbO, ZnO) are determined stoichiometrically from the base metal concentration.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-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. 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	-			25/06/2024	1	25/06/2024	26/06/2024		25/06/2024	[NT]
Date analysed	-			26/06/2024	1	26/06/2024	27/06/2024		26/06/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	1	<10	<10	0	90	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	1	<10	<10	0	90	[NT]
Benzene	µg/L	1	Org-023	<1	1	<1	<1	0	91	[NT]
Toluene	µg/L	1	Org-023	<1	1	<1	<1	0	92	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	1	<1	<1	0	86	[NT]
m+p-xylene	µg/L	2	Org-023	<2	1	<2	<2	0	90	[NT]
o-xylene	µg/L	1	Org-023	<1	1	<1	<1	0	87	[NT]
Naphthalene	µg/L	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	107	1	120	113	6	97	[NT]
Surrogate Toluene-d8	%		Org-023	100	1	98	99	1	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	94	1	95	91	4	92	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			24/06/2024	[NT]	[NT]	[NT]	[NT]	24/06/2024	[NT]
Date analysed	-			24/06/2024	[NT]	[NT]	[NT]	[NT]	24/06/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	82	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			24/06/2024	[NT]	[NT]	[NT]	[NT]	24/06/2024	[NT]
Date analysed	-			25/06/2024	[NT]	[NT]	[NT]	[NT]	25/06/2024	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[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]	80	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[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]	74	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[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]	67	[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]	97	[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	68	[NT]	[NT]	[NT]	[NT]	64	[NT]

QUALITY CONTROL: OCPs in Water - Trace Level						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			24/06/2024	[NT]	[NT]	[NT]	[NT]	24/06/2024	[NT]
Date analysed	-			25/06/2024	[NT]	[NT]	[NT]	[NT]	25/06/2024	[NT]
alpha-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	77	[NT]
HCB	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	74	[NT]
gamma-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	80	[NT]
delta-BHC	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	75	[NT]
Heptachlor Epoxide	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	76	[NT]
gamma-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-Chlordane	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	73	[NT]
Dieldrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	84	[NT]
Endosulfan II	µg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	90	[NT]
Endrin Aldehyde	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	80	[NT]
Methoxychlor	µg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	78	[NT]	[NT]	[NT]	[NT]	69	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			25/06/2024	1	25/06/2024	25/06/2024		25/06/2024	[NT]
Date analysed	-			25/06/2024	1	25/06/2024	25/06/2024		25/06/2024	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		99	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	[NT]		102	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		104	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		100	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	[NT]		103	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	117	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	[NT]		103	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	6	[NT]		105	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	2	25/06/2024	25/06/2024		[NT]	[NT]
Date analysed	-			[NT]	2	25/06/2024	25/06/2024		[NT]	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	[NT]	2	2	2	0	[NT]	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	[NT]	2	<0.1	<0.1	0	[NT]	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	[NT]	2	<1	<1	0	[NT]	[NT]
Copper-Dissolved	µg/L	1	Metals-022	[NT]	2	<1	<1	0	[NT]	[NT]
Lead-Dissolved	µg/L	1	Metals-022	[NT]	2	<1	<1	0	[NT]	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	[NT]	2	<0.05	[NT]		[NT]	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	[NT]	2	6	6	0	[NT]	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	[NT]	2	16	16	0	[NT]	[NT]

QUALITY CONTROL: HM in water - total					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date prepared	-			25/06/2024	[NT]	[NT]	[NT]	[NT]	25/06/2024	[NT]
Date analysed	-			25/06/2024	[NT]	[NT]	[NT]	[NT]	25/06/2024	[NT]
Arsenic-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Cadmium-Total	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chromium-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Copper-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Lead-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Mercury-Total	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	115	[NT]
Nickel-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Zinc-Total	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]

QUALITY CONTROL: Miscellaneous Inorganics					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			21/06/2024	[NT]	[NT]	[NT]	[NT]	21/06/2024	[NT]
Date analysed	-			21/06/2024	[NT]	[NT]	[NT]	[NT]	21/06/2024	[NT]
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	[NT]	[NT]	99	[NT]
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: Miscellaneous LC						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	354595-2
Date prepared	-			28/06/2024	1	28/06/2024	28/06/2024		28/06/2024	28/06/2024
Date analysed	-			03/07/2024	1	03/07/2024	03/07/2024		03/07/2024	03/07/2024
Imidacloprid	ng/L	50	Ext-054	<50	1	<50	<50	0	94	103
Surrogate Terbuthlazine-d5	% recovery		Ext-054	117	1	106	104	2	89	109

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

TRH Water(C10-C40) NEPM - The positive result in the blank/rinsate sample is due to a single peak with no hydrocarbon profile that is consistent with the use of plastic containers.

Imidacloprid analysed by MPL Laboratory. Report no PFF1499.

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	Harley Wang

Sample Login Details	
Your reference	E36120PW Campbelltown
Envirolab Reference	354595
Date Sample Received	21/06/2024
Date Instructions Received	21/06/2024
Date Results Expected to be Reported	28/06/2024

Sample Condition	
Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	6 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	18
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	OCPs in Water - Trace Level	HM in water - dissolved	HM in water - total	pH	Electrical Conductivity	Miscellaneous LC
MW2	✓	✓	✓	✓	✓		✓	✓	✓
MW4	✓	✓	✓	✓	✓		✓	✓	✓
MW6	✓	✓	✓	✓	✓		✓	✓	✓
WDUP101	✓	✓	✓	✓	✓				✓
TB-W101	✓	✓	✓			✓			
TS-W101	✓								

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	JKE Job Number: E36120PW Date Results Required: STANDARD	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001
Attention: Aileen	Page: 1 of 1	Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD

Sample Preserved in Esky on Ice

Tests Required

	Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	Combo 3	EC/pH	OCP (Trace level)	Imidacloprid (Trace level)	BTEX	Combo 3 (total metals)						
1	21/06/2024		MW2	4x amber, 4x BTEX, 1x HNO3, 1x PVC	0	Water	X	X	X	X								
2	21/06/2024		MW4	4x amber, 4x BTEX, 1x HNO3, 1x PVC	0.1	Water	X	X	X	X								
3	21/06/2024		MW6	4x amber, 4x BTEX, 1x HNO3, 1x PVC	0	Water	X	X	X	X								
4	21/06/2024		WDUP101	4x amber, 4x BTEX, 1x HNO3	NA	Duplicate	X		X	X								
	21/06/2024		WDUP102	2x amber, 2x BTEX, 1x HNO3	NA	Duplicate	X			Please send to Envirolab VIC								
5	21/06/2024		TB-W101	2x amber, 2x BTEX, 1x HNO3	NA	Trip Blank						X						
6	21/06/2024		TS-W101	1x BTEX	NA	Trip Spike					X							

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 354595
Date Received: 21-06-24
Time Received: 15:10
Received By: TT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):

All analysis PQLs to ANZECC (2000) Detection Limits Please

Sample Containers:
G1 - 500mL Amber Glass Bottle
V - BTEX Vial H - HNO3 Wash PVC
PVC - HDPE Plastic Bottles

Relinquished By: HW	Date: 21/06/2024	Time: 12:00pm	Received By: ELS TT	Date: 21.06.24 15:10

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph +61 3 9763 2500
melbourne@envirolab.com.au
www.envirolab.com.au

Certificate of Analysis MFF0447

Client Details

Client	JK Environments
Contact	Harley Wang
Address	115 Wicks Road, Macquarie Park, NSW, 2113

Sample Details

Your Reference	E36120PW
Number of Samples	3 Soil
Date Samples Received	26/06/2024
Date Instructions Received	26/06/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date Results Requested by	02/07/2024
Date of Issue	07/02/2024

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

Authorisation Details

Results Approved By	Tara White, Metals Supervisor Tianna Milburn, Senior Chemist
Laboratory Manager	Pamela Adams

Certificate of Analysis MFF0447

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
MFF0447-01	SDUP104	Soil	19/06/2024	26/06/2024
MFF0447-02	SDUP105	Soil	19/06/2024	26/06/2024
MFF0447-03	SDUP106	Soil	19/06/2024	26/06/2024

Certificate of Analysis MFF0447

Volatile TRH and BTEX (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
TRH C6-C9	mg/kg	25	<25	<25	<25
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 less BTEX (F1)	mg/kg	25	<25	<25	<25
Methyl tert butyl ether (MTBE)	mg/kg	0.50	<0.50	<0.50	<0.50
Benzene	mg/kg	0.20	<0.20	<0.20	<0.20
Toluene	mg/kg	0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1.0	<1.0	<1.0	<1.0
meta+para Xylene	mg/kg	2.0	<2.0	<2.0	<2.0
ortho-Xylene	mg/kg	1.0	<1.0	<1.0	<1.0
Total Xylene	mg/kg	3.0	<3.0	<3.0	<3.0
Naphthalene (value used in F2 calc)	mg/kg	1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%		*77.9*	*88.3*	*94.1*

Certificate of Analysis MFF0447

Semi-volatile TRH (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
TRH C10-C14	mg/kg	50	<50	<50	<50
TRH C15-C28	mg/kg	100	<100	<100	<100
TRH C29-C36	mg/kg	100	<100	<100	<100
Total +ve TRH C10-C36	mg/kg	50	<50	<50	<50
TRH >C10-C16	mg/kg	50	<50	<50	<50
TRH >C10-C16 less Naphthalene F2	mg/kg	50	<50	<50	<50
TRH >C16-C34 (F3)	mg/kg	100	<100	<100	<100
TRH >C34-C40 (F4)	mg/kg	100	<100	<100	<100
Total +ve TRH >C10-C40	mg/kg	50	<50	<50	<50
Surrogate o-Terphenyl	%		*76.2*	*90.0*	*88.3*

Certificate of Analysis MFF0447

Polycyclic Aromatic Hydrocarbons (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
Naphthalene	mg/kg	0.10	<0.10	<0.10	<0.10
Acenaphthylene	mg/kg	0.10	<0.10	<0.10	<0.10
Acenaphthene	mg/kg	0.10	<0.10	<0.10	<0.10
Fluorene	mg/kg	0.10	<0.10	<0.10	<0.10
Phenanthrene	mg/kg	0.10	<0.10	<0.10	<0.10
Anthracene	mg/kg	0.10	<0.10	<0.10	<0.10
Fluoranthene	mg/kg	0.10	0.31	<0.10	<0.10
Pyrene	mg/kg	0.10	0.34	<0.10	<0.10
Benzo(a)anthracene	mg/kg	0.10	0.12	<0.10	<0.10
Chrysene	mg/kg	0.10	0.17	<0.10	<0.10
Benzo(b,j,k)fluoranthene	mg/kg	0.20	0.34	<0.20	<0.20
Benzo(a)pyrene	mg/kg	0.050	0.22	<0.050	<0.050
Indeno(1,2,3-c,d)pyrene	mg/kg	0.10	0.14	<0.10	<0.10
Dibenzo(a,h)anthracene	mg/kg	0.10	<0.10	<0.10	<0.10
Benzo(g,h,i)perylene	mg/kg	0.10	0.20	<0.10	<0.10
Total +ve PAH	mg/kg	0.050	1.8	<0.050	<0.050
Benzo(a)pyrene TEQ calc zero	mg/kg	0.50	<0.50	<0.50	<0.50
Benzo(a)pyrene TEQ calc Half	mg/kg	0.50	<0.50	<0.50	<0.50
Benzo(a)pyrene TEQ calc PQL	mg/kg	0.50	<0.50	<0.50	<0.50
Surrogate p-Terphenyl-D14	%		*117*	*130*	*126*

Certificate of Analysis MFF0447

Organochlorine Pesticides (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
alpha-BHC	mg/kg	0.10	<0.10	<0.10	<0.10
Hexachlorobenzene	mg/kg	0.10	<0.10	<0.10	<0.10
beta-BHC	mg/kg	0.10	<0.10	<0.10	<0.10
gamma-BHC	mg/kg	0.10	<0.10	<0.10	<0.10
delta-BHC	mg/kg	0.10	<0.10	<0.10	<0.10
Heptachlor	mg/kg	0.10	<0.10	<0.10	<0.10
Aldrin	mg/kg	0.10	<0.10	<0.10	<0.10
Heptachlor epoxide	mg/kg	0.10	<0.10	<0.10	<0.10
trans-Chlordane	mg/kg	0.10	<0.10	<0.10	<0.10
cis-Chlordane	mg/kg	0.10	<0.10	<0.10	<0.10
Endosulfan I	mg/kg	0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.10	<0.10	<0.10	<0.10
Dieldrin	mg/kg	0.10	<0.10	<0.10	<0.10
Endrin	mg/kg	0.10	<0.10	<0.10	<0.10
4,4'-DDD	mg/kg	0.10	<0.10	<0.10	<0.10
Endosulfan II	mg/kg	0.10	<0.10	<0.10	<0.10
Endrin aldehyde	mg/kg	0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.10	<0.10	<0.10	<0.10
Endosulfan sulfate	mg/kg	0.10	<0.10	<0.10	<0.10
Endrin ketone	mg/kg	0.10	<0.10	<0.10	<0.10
Methoxychlor	mg/kg	0.10	<0.10	<0.10	<0.10
Mirex	mg/kg	0.10	<0.10	<0.10	<0.10
Total +ve OCP	mg/kg	0.10	<0.10	<0.10	<0.10
Surrogate 4-chloro-3-nitrobenzotrifluoride	%		*69.8*	*87.2*	*84.7*

Organophosphorus Pesticides (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
Dichlorvos	mg/kg	0.10	<0.10	<0.10	<0.10
Dimethoate	mg/kg	0.10	<0.10	<0.10	<0.10
Diazinon	mg/kg	0.10	<0.10	<0.10	<0.10
Chlorpyrifos-methyl	mg/kg	0.10	<0.10	<0.10	<0.10
Ronnel	mg/kg	0.10	<0.10	<0.10	<0.10
Fenitrothion	mg/kg	0.10	<0.10	<0.10	<0.10
Malathion	mg/kg	0.10	<0.10	<0.10	<0.10
Chlorpyrifos	mg/kg	0.10	<0.10	<0.10	<0.10
Parathion	mg/kg	0.10	<0.10	<0.10	<0.10
Bromophos-ethyl	mg/kg	0.10	<0.10	<0.10	<0.10
Ethion	mg/kg	0.10	<0.10	<0.10	<0.10
Coumaphos	mg/kg	0.10	<0.10	<0.10	<0.10
Disulfoton	mg/kg	0.10	<0.10	<0.10	<0.10
Fenamiphos	mg/kg	0.10	<0.10	<0.10	<0.10
Fenthion	mg/kg	0.10	<0.10	<0.10	<0.10
Methidathion	mg/kg	0.10	<0.10	<0.10	<0.10
Mevinphos	mg/kg	0.10	<0.10	<0.10	<0.10
Parathion-methyl	mg/kg	0.10	<0.10	<0.10	<0.10
Phorate	mg/kg	0.10	<0.10	<0.10	<0.10
Phosalone	mg/kg	0.10	<0.10	<0.10	<0.10
Azinphos-methyl	mg/kg	0.10	<0.10	<0.10	<0.10
Surrogate 4-chloro-3-nitrobenzotrifluoride	%		*69.8*	*87.2*	*84.7*

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Polychlorinated Biphenyls (Soil)

Envirolab ID	**Units**	**PQL**	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
Aroclor 1016	mg/kg	0.10	<0.10	<0.10	<0.10
Aroclor 1221	mg/kg	0.10	<0.10	<0.10	<0.10
Aroclor 1232	mg/kg	0.10	<0.10	<0.10	<0.10
Aroclor 1242	mg/kg	0.10	<0.10	<0.10	<0.10
Aroclor 1248	mg/kg	0.10	<0.10	<0.10	<0.10
Aroclor 1254	mg/kg	0.10	<0.10	<0.10	<0.10
Aroclor 1260	mg/kg	0.10	<0.10	<0.10	<0.10
Total +ve PCB (1016-1260)	mg/kg	0.10	<0.10	<0.10	<0.10
Surrogate 2-Fluorobiphenyl	%		*94.1*	*107*	*101*

Acid Extractable Metals (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
Arsenic	mg/kg	4.0	8.5	6.2	7.9
Cadmium	mg/kg	0.40	<0.40	<0.40	<0.40
Chromium	mg/kg	1.0	9.1	8.5	9.6
Copper	mg/kg	1.0	26	26	32
Mercury	mg/kg	0.10	<0.10	0.14	<0.10
Nickel	mg/kg	1.0	9.6	6.8	22
Lead	mg/kg	1.0	38	15	20
Zinc	mg/kg	1.0	59	52	60

Certificate of Analysis MFF0447

Inorganics - Moisture (Soil)

Envirolab ID	Units	PQL	MFF0447-01	MFF0447-02	MFF0447-03
Your Reference			SDUP104	SDUP105	SDUP106
Date Sampled			19/06/2024	19/06/2024	19/06/2024
Moisture	%	0.10	13	18	12

Method Summary

Method ID	Methodology Summary
INORG-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
METALS-020	Determination of various metals by ICP-OES.
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. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
ORG-021/022/025_PCB	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS.
ORG-022	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and soils using DCM/Acetone/Methanol.
ORG-022_OC	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and soils using DCM/Acetone/Methanol.
ORG-022_PAH	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and solids using DCM/Acetone/Methanol. For PAHs:- Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. 1. 'TEQ 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. 'TEQ 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. 'TEQ 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, for Total +ve calculations, the PQL is reflective of the lowest individual PQL and therefore, for example, "Total +ve PAHs" is simply a sum of the positive individual PAHs.
ORG-023_F1_TOT	Determination of volatile organic compounds (VOCs) by P&T-GC-MS. Water samples are analysed directly by purge and trap GC-MS. Solids are extracted with Methanol, diluted and analysed 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.

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

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.

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.

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.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

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.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

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 QAQC tables for details (available on request); <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; 60-140% for organics (+/-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 typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

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. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

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 or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary MFF0447

Client Details

Client	JK Environments
Your Reference	E36120PW
Date Issued	07/02/2024

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	No	Duplicate Outliers Exist - See detailed list below
Matrix Spike	Yes	No Outliers
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	Yes	No Outliers

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary MFF0447

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
vTRH&MBTEXN | Soil	1-3	19/06/2024	27/06/2024	27/06/2024	Yes
sTRH | Soil	2-3	19/06/2024	27/06/2024	27/06/2024	Yes
	1	19/06/2024	27/06/2024	28/06/2024	Yes
PAH | Soil	2-3	19/06/2024	27/06/2024	27/06/2024	Yes
	1	19/06/2024	27/06/2024	28/06/2024	Yes
OCP | Soil	2-3	19/06/2024	27/06/2024	27/06/2024	Yes
	1	19/06/2024	27/06/2024	28/06/2024	Yes
OPP (21 list) | Soil	2-3	19/06/2024	27/06/2024	27/06/2024	Yes
	1	19/06/2024	27/06/2024	28/06/2024	Yes
PCB | Soil	2-3	19/06/2024	27/06/2024	27/06/2024	Yes
	1	19/06/2024	27/06/2024	28/06/2024	Yes
Metals | Soil	1-3	19/06/2024	27/06/2024	28/06/2024	Yes
Metals-Hg | Soil	1-3	19/06/2024	27/06/2024	28/06/2024	Yes
Moisture | Soil	1-3	19/06/2024	27/06/2024	28/06/2024	Yes

Outliers: Duplicates

ORG-022_PAH | Polycyclic Aromatic Hydrocarbons (Soil) | Batch BFF4341

Sample ID	Duplicate ID	Analyte	% Limits	RPD
MFF0447-01	DUP1	Benzo(a)anthracene	50.00	200[1]

Quality Control MFF0447

ORG-023_F1_TOT | Volatile TRH and BTEX (Soil) | Batch BFF4340

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
TRH C6-C9	mg/kg	25	<25	<25 | <25 | [NA]	95.8	95.7
TRH C6-C10	mg/kg	25	<25	<25 | <25 | [NA]	97.3	97.9
TRH C6-C10 less BTEX (F1)	mg/kg	25	<25	<25 | <25 | [NA]	[NA]	[NA]
Methyl tert butyl ether (MTBE)	mg/kg	0.50	<0.50	<0.50 | <0.50 | [NA]	[NA]	[NA]
Benzene	mg/kg	0.20	<0.20	<0.20 | <0.20 | [NA]	84.9	83.7
Toluene	mg/kg	0.50	<0.50	<0.50 | <0.50 | [NA]	99.2	98.0
Ethylbenzene	mg/kg	1.0	<1.0	<1.0 | <1.0 | [NA]	118	117
meta+para Xylene	mg/kg	2.0	<2.0	<2.0 | <2.0 | [NA]	121	121
ortho-Xylene	mg/kg	1.0	<1.0	<1.0 | <1.0 | [NA]	117	115
Total Xylene	mg/kg	3.0	<3.0	<3.0 | <3.0 | [NA]	[NA]	[NA]
Naphthalene (value used in F2 calc)	mg/kg	1.0	<1.0	<1.0 | <1.0 | [NA]	[NA]	[NA]
Surrogate aaa-Trifluorotoluene	*%*		*79.4*	*77.9 | 74.9*	*98.0*	*91.5*

ORG-020 | Semi-volatile TRH (Soil) | Batch BFF4341

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
TRH C10-C14	mg/kg	50	<50	<50 | <50 | [NA]		123	116
TRH C15-C28	mg/kg	100	<100	<100 | <100 | [NA]		100	103
TRH C29-C36	mg/kg	100	<100	<100 | <100 | [NA]		97.9	140
TRH >C10-C16	mg/kg	50	<50	<50 | <50 | [NA]		96.4	92.6
TRH >C16-C34 (F3)	mg/kg	100	<100	<100 | <100 | [NA]		102	109
TRH >C34-C40 (F4)	mg/kg	100	<100	<100 | <100 | [NA]		97.9	120
Surrogate o-Terphenyl	*%*		*93.9*	*76.2 | 89.3*		*100*	*91.2*

ORG-022_PAH | Polycyclic Aromatic Hydrocarbons (Soil) | Batch BFF4341

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
Naphthalene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		99.0	101
Acenaphthylene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Acenaphthene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		104	104
Fluorene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		106	106
Phenanthrene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		104	105
Anthracene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Fluoranthene	mg/kg	0.10	<0.10	0.307 | 0.227 | 29.7		112	120
Pyrene	mg/kg	0.10	<0.10	0.339 | 0.247 | 31.3		119	123
Benzo(a)anthracene	mg/kg	0.10	<0.10	0.120 | <0.10 | 200 [1]		[NA]	[NA]
Chrysene	mg/kg	0.10	<0.10	0.171 | 0.133 | 25.2		109	105
Benzo(b,j,k)fluoranthene	mg/kg	0.20	<0.20	0.344 | 0.277 | 21.7		[NA]	[NA]
Benzo(a)pyrene	mg/kg	0.050	<0.050	0.223 | 0.190 | 16.4		104	103
Indeno(1,2,3-c,d)pyrene	mg/kg	0.10	<0.10	0.144 | 0.119 | 18.8		[NA]	[NA]
Dibenzo(a,h)anthracene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Benzo(g,h,i)perylene	mg/kg	0.10	<0.10	0.200 | 0.159 | 22.8		[NA]	[NA]
Surrogate p-Terphenyl-D14	*%*		*123*	*117 | 127*		*130*	*126*

ORG-022_OC | Organochlorine Pesticides (Soil) | Batch BFF4341

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
alpha-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		97.4	98.7
Hexachlorobenzene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
beta-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		94.8	95.9
gamma-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
delta-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Heptachlor	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		84.0	85.5
Aldrin	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		70.6	73.1
Heptachlor epoxide	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		131	139
trans-Chlordane	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
cis-Chlordane	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Endosulfan I	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
4,4'-DDE	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		120	124
Dieldrin	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		121	130
Endrin	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		119	139
4,4'-DDD	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		125	128
Endosulfan II	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Endrin aldehyde	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
4,4'-DDT	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Endosulfan sulfate	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		121	128
Endrin ketone	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Methoxychlor	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Mirex	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Surrogate 4-chloro-3-nitrobenzotrifluoride	*%*		*83.5*	*69.8 | 83.2*		*90.6*	*90.8*

ORG-022 | Organophosphorus Pesticides (Soil) | Batch BFF4341

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
Dichlorvos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		91.6	107
Dimethoate	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Diazinon	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Chlorpyrifos-methyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		120	127
Ronnel	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		125	128
Fenitrothion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		108	134
Malathion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		104	127
Chlorpyrifos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		128	137
Parathion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		78.4	94.2
Bromophos-ethyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Ethion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		92.0	113
Coumaphos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Disulfoton	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Fenamiphos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Fenthion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Methidathion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Mevinphos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Parathion-methyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Phorate	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Phosalone	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Azinphos-methyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Surrogate 4-chloro-3-nitrobenzotrifluoride	*%*		*83.5*	*69.8 | 83.2*		*90.6*	*90.8*

Quality Control MFF0447

ORG-021/022/025_PCB | Polychlorinated Biphenyls (Soil) | Batch BFF4341

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
Aroclor 1016	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1221	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1232	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1242	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1248	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1254	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1260	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
PCB C103	mg/kg			0.00 | 0.00 | [NA]		71.2	71.8
Surrogate 2-Fluorobiphenyl	*%*		*118*	*94.1 | 107*		*118*	*115*

METALS-020 | Acid Extractable Metals (Soil) | Batch BFF4339

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 MFF0447-01 Samp | QC | RPD %	LCS %	Spike % MFF0447-02
Arsenic	mg/kg	4.0	<4.0	8.53 | 10.4 | 19.4		104	101
Cadmium	mg/kg	0.40	<0.40	<0.40 | <0.40 | [NA]		104	91.5
Chromium	mg/kg	1.0	<1.0	9.08 | 11.6 | 24.0		102	101
Copper	mg/kg	1.0	<1.0	25.6 | 30.6 | 17.9		103	95.6
Lead	mg/kg	1.0	<1.0	37.9 | 41.4 | 8.60		100	90.4
Mercury	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]	<0.10 | <0.10 | [NA]	99.6	90.3
Nickel	mg/kg	1.0	<1.0	9.58 | 11.3 | 16.1		101	93.9
Zinc	mg/kg	1.0	<1.0	59.5 | 70.5 | 17.0		103	84.7

Analyte	Units	PQL	Blank	DUP3 BFF4339-DUP3# Samp | QC | RPD %	DUP4 BFF4339-DUP4# Samp | QC | RPD %	LCS %
Arsenic	mg/kg	4		4.79 | 4.27 | 11.5		[NA]
Cadmium	mg/kg	0.4		<0.40 | <0.40 | [NA]		[NA]
Chromium	mg/kg	1		15.6 | 18.2 | 15.0		[NA]
Copper	mg/kg	1		13.3 | 11.0 | 18.9		[NA]
Lead	mg/kg	1		16.2 | 17.8 | 9.49		[NA]
Mercury	mg/kg	0.1		<0.10 | <0.10 | [NA]	<0.10 | <0.10 | [NA]	[NA]
Nickel	mg/kg	1		6.19 | 7.30 | 16.4		[NA]
Zinc	mg/kg	1		42.7 | 42.5 | 0.443		[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-008 | Inorganics - Moisture (Soil) | Batch BFF4335

Analyte	Units	PQL	Blank	DUP1 MFF0447-01 Samp | QC | RPD %	DUP2 BFF4335-DUP2# Samp | QC | RPD %	LCS %
Moisture	%	0.1		13.0 | 9.18 | 34.7	9.76 | 10.5 | 7.31	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

QC Comments

Identifier	Description
[1]	Duplicate %RPD may be flagged as an outlier to routine laboratory acceptance, however, where one or both results are <10*PQL, the RPD acceptance criteria increases exponentially.

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph +61 3 9763 2500
melbourne@envirolab.com.au
www.envirolab.com.au

Sample Receipt Advice MFF0447

Client Details

Client	JK Environments
Attention	Harley Wang

Sample Login Details

Your Reference	E36120PW
Envirolab Reference	MFF0447
Date Sample Received	26/06/2024
Date Instructions Received	26/06/2024
Date Final Results Expected	02/07/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
Number of Samples	3 Soil
Turnaround Time	4 Days
Temperatures / Cooling Methods	11.1°C Ice Pack

Additional Info

Sample storage - waters are routinely disposed at approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Where no sampling date has been supplied for some or all samples, the date of sample receipt has been used as the associated sampling date. The sampling dates are used to assess compliance to recommended Technical Holding Times.

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).

Please direct any queries to:

Pamela Adams

Phone	03 9763 2500
Email	padams@envirolab.com.au

Chris De Luca

Phone	03 9763 2500
Email	cdeluca@envirolab.com.au

Analysis underway, details on the following page

Sample Receipt Advice MFF0447

Analysis Grid

The • indicates the testing you have requested. ***THIS IS NOT A REPORT OF THE RESULTS.***

	Combination 6	Moisture
MFF0447-01 Soil | 19/06/2024 SDUP104	•	•
MFF0447-02 Soil | 19/06/2024 SDUP105	•	•
MFF0447-03 Soil | 19/06/2024 SDUP106	•	•

Suite Details

Suite Name	Suite Analyses
Combination 6 | Soil	vTRH&MBTEXN, sTRH, PAH, OCP, OPP (21 list), PCB, As, Cd, Cr, Cu, Hg, Ni, Pb, Zn

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: E36120PW Date Results Required: STANDARD Page: 4 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Harley Wang hwang@jkenvironments.com.au

Location: Campbelltown — Sample Preserved in Esky on Ice

Sampler: AD/JTL — Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX	PAHs	Heavy metals (8 metals)	OCP (trace)	Combo 3 (total metals)		
18/06/2024	70	BH136	0.5-0.6	G	0.2	XW Siltstone												
18/06/2024	71	BH137	0.03-0.3	G, A	0.14	F: Silty Sand	X											
18/06/2024	72	BH137	0.4-0.6	G, A	0.6	Silty Clay												
18/06/2024	73	BH137	1.0-1.2	G, A	0.4	XW Siltstone												
19/06/2024	74	BH138	0.18-0.3	G, A	0.6	F: Silty Clay							X	X	X			
18/06/2024	75	BH139	0.18-0.23	G, A	0.8	F: Silty Sand							X	X	X			
18/06/2024	76	BH139	0.25-0.35	G	0.4	Silty Clay												
18/06/2024	77	SDUP101	-	G	NA	Field Duplicate		X										
18/06/2024	78	SDUP102	-	G	NA	Field Duplicate		X										
18/06/2024	79	SDUP103	-	G	NA	Field Duplicate		X										
1 19/06/2024	80	SDUP104	-	G	NA	Field Duplicate		X			Send to VIC							
2 19/06/2024	81	SDUP105	-	G	NA	Field Duplicate		X			Send to VIC							
3 19/06/2024	82	SDUP106	-	G	NA	Field Duplicate		X			Send to VIC							
17-20/06/24	83	TB-S101	-	V	NA	Trip Blank				X								
17-20/06/24	84	TB-S102	-	V	NA	Trip Blank				X								
17-20/06/24	85	TS-S101	-	V	NA	Trip Spike						X						
17-20/06/24	86	TS-S102	-	V	NA	Trip Spike						X						
19/06/2024	87	FR-101-HA	-	#	NA	Water										X		

ENVIROLAB
Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500
Job No: MFFG447
Date Received: 26/6/24
Time Received: 12:45pm
Received By: DS
Temp: Cool/Ambient 11.1°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by ELS (SYD)
TTri 25.06.24

Remarks (comments/detection limits required):
Send SDUP104 to SDUP106 to Melbourne as inter-lab duplicates

Sample Containers:
G - 250mg Glass Jar A - Ziplock Asbestos Bag V - Vial #2x BTEX, 2x amber, 1x HNO3

35464

Relinquished By: HW	Date: 24/06/2024	Time: 12:45pm	Received By:	Date:

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph +61 3 9763 2500
melbourne@envirolab.com.au
www.envirolab.com.au

Certificate of Analysis MFF0433

Client Details

Client	JK Environments
Contact	Harley Wang
Address	115 Wicks Road, Macquarie Park, NSW, 2113

Sample Details

Your Reference	E36120PW
Number of Samples	1 Water
Date Samples Received	25/06/2024
Date Instructions Received	25/06/2024

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date Results Requested by	01/07/2024
Date of Issue	01/07/2024

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

Authorisation Details

Results Approved By	Tara White, Metals Supervisor Tianna Milburn, Senior Chemist
Laboratory Manager	Pamela Adams

Certificate of Analysis MFF0433

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
MFF0433-01	WDUP102	Water	21/06/2024	25/06/2024

Certificate of Analysis MFF0433

Volatile TRH and BTEX (Water)

Envirolab ID	**Units**	**PQL**	MFF0433-01
Your Reference			WDUP102
Date Sampled			21/06/2024
TRH C6-C9	µg/L	10	<10
TRH C6-C10	µg/L	10	<10
TRH C6-C10 less BTEX (F1)	µg/L	10	<10
Methyl tert butyl ether (MTBE)	µg/L	1.0	<1.0
Benzene	µg/L	1.0	<1.0
Toluene	µg/L	1.0	<1.0
Ethylbenzene	µg/L	1.0	<1.0
meta+para Xylene	µg/L	2.0	<2.0
ortho-Xylene	µg/L	1.0	<1.0
Total Xylene	µg/L	3.0	<3.0
Naphthalene (value used in F2 calc)	µg/L	1.0	<1.0
Surrogate Dibromofluoromethane	%		*136*
Surrogate Toluene-D8	%		*121*
Surrogate 4-Bromofluorobenzene	%		*122*

Semi-volatile TRH (Water)

Envirolab ID	Units	PQL	MFF0433-01
Your Reference			WDUP102
Date Sampled			21/06/2024
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	100	<100
TRH C29-C36	µg/L	100	<100
Total +ve TRH C10-C36	µg/L	50	<50
TRH >C10-C16	µg/L	50	<50
TRH >C10-C16 less Naphthalene F2	µg/L	50	<50
TRH >C16-C34 (F3)	µg/L	100	100
TRH >C34-C40 (F4)	µg/L	100	<100
Total +ve TRH >C10-C40	µg/L	50	100
Surrogate o-Terphenyl	%		*65.7*

Certificate of Analysis MFF0433

Polycyclic Aromatic Hydrocarbons (Water)

Envirolab ID	**Units**	**PQL**	MFF0433-01
Your Reference			WDUP102
Date Sampled			21/06/2024
Naphthalene	µg/L	0.10	<0.10
Acenaphthylene	µg/L	0.10	<0.10
Acenaphthene	µg/L	0.10	<0.10
Fluorene	µg/L	0.10	<0.10
Phenanthrene	µg/L	0.10	<0.10
Anthracene	µg/L	0.10	<0.10
Fluoranthene	µg/L	0.10	<0.10
Pyrene	µg/L	0.10	<0.10
Benzo(a)anthracene	µg/L	0.10	<0.10
Chrysene	µg/L	0.10	<0.10
Benzo(b,j,k)fluoranthene	µg/L	0.20	<0.20
Benzo(a)pyrene	µg/L	0.10	<0.10
Indeno(1,2,3-c,d)pyrene	µg/L	0.10	<0.10
Dibenzo(a,h)anthracene	µg/L	0.10	<0.10
Benzo(g,h,i)perylene	µg/L	0.10	<0.10
Total +ve PAH	µg/L	0.10	<0.10
Surrogate p-Terphenyl-D14	%		*82.7*

Certificate of Analysis MFF0433

Dissolved Low Level Metals (Water)

Envirolab ID	Units	PQL	MFF0433-01
Your Reference			WDUP102
Date Sampled			21/06/2024
Arsenic	µg/L	1.0	<1.0
Cadmium	µg/L	0.10	<0.10
Chromium	µg/L	1.0	<1.0
Copper	µg/L	1.0	<1.0
Mercury	µg/L	0.050	<0.050
Nickel	µg/L	1.0	<1.0
Lead	µg/L	1.0	<1.0
Zinc	µg/L	1.0	<1.0

Method Summary

Method ID	Methodology Summary
METALS-021	Determination of Mercury by Cold Vapour AAS.
METALS-022	Determination of various metals by ICP-MS.Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements.Salt forms and/or anion/cation forms (e.g. FeO, PbO, ZnO, BO3) are determined stoichiometrically from the base metal concentration.
ORG-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. 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_PAH	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and solids using DCM/Acetone/Methanol. For PAHs:- Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. 1. 'TEQ 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. 'TEQ 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. 'TEQ 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, for Total +ve calculations, the PQL is reflective of the lowest individual PQL and therefore, for example, "Total +ve PAHs" is simply a sum of the positive individual PAHs.
ORG-023_F1_TOT	Determination of volatile organic compounds (VOCs) by P&T-GC-MS. Water samples are analysed directly by purge and trap GC-MS. Solids are extracted with Methanol, diluted and analysed 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.

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

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.

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.

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.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

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.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

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 QAQC tables for details (available on request); <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; 60-140% for organics (+/-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 typically insufficient in order to satisfy laboratory QA/QC protocols.

Miscellaneous Information

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. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

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 or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary MFF0433

Client Details

Client	JK Environments
Your Reference	E36120PW
Date Issued	01/07/2024

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	No	Duplicate Outliers Exist - See detailed list below
Matrix Spike	Yes	No Outliers
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	No	QC Frequency Outliers Exist - See detailed list below

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary MFF0433

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
vTRH&MBTEXN | Water	1	21/06/2024	28/06/2024	28/06/2024	Yes
sTRH | Water	1	21/06/2024	26/06/2024	26/06/2024	Yes
PAH | Water	1	21/06/2024	26/06/2024	26/06/2024	Yes
Dissolved Metals (LL) | Water	1	21/06/2024	26/06/2024	26/06/2024	Yes
Dissolved Metals (LL)-Hg | Water	1	21/06/2024	26/06/2024	26/06/2024	Yes

Outliers: Duplicates

ORG-023_F1_TOT|Volatile TRH and BTEX (Water)| Batch BFF4695

Sample ID	Duplicate ID	Analyte	% Limits	RPD
BFF4695-DUP1#	DUP1	TRH C6-C9	30.00	200[1]
BFF4695-DUP2#	DUP2	TRH C6-C10	30.00	35.7[1]
BFF4695-DUP2#	DUP2	TRH C6-C10 less BTEX (F1)	30.00	35.7[1]
BFF4695-DUP2#	DUP2	TRH C6-C9	30.00	200[1]

Outliers: QC Frequency

ORG-020|Semi-volatile TRH (Water)| Batch BFF3989

Analysis	QC Type	Expected	Reported
sTRH	Duplicate	2	0
	Matrix Spike	1	0

ORG-022_PAH|Polycyclic Aromatic Hydrocarbons (Water)| Batch BFF3989

Analysis	QC Type	Expected	Reported
PAH	Duplicate	1	0
	Matrix Spike	1	0

Quality Control MFF0433

ORG-023_F1_TOT | Volatile TRH and BTEX (Water) | Batch BFF4695

Analyte	Units	PQL	Blank	DUP1 BFF4695-DUP1# Samp | QC | RPD %	DUP2 BFF4695-DUP2# Samp | QC | RPD %	LCS %	Spike % BFF4695-MS2#
TRH C6-C9	µg/L	10	<10	13.3 | <10 | 200 [1]	13.4 | <10 | 200 [1]	93.3	89.5
TRH C6-C10	µg/L	10	<10	25.0 | 19.4 | 25.3	24.9 | 17.4 | 35.7 [1]	91.0	84.7
TRH C6-C10 less BTEX (F1)	µg/L	10	<10	25.0 | 19.3 | 25.4	24.9 | 17.4 | 35.7 [1]	[NA]	[NA]
Methyl tert butyl ether (MTBE)	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	[NA]	[NA]
Benzene	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	90.0	70.9
Toluene	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	105	82.8
Ethylbenzene	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	106	84.2
meta+para Xylene	µg/L	2.0	<2.0	<2.0 | <2.0 | [NA]	<2.0 | <2.0 | [NA]	112	89.4
ortho-Xylene	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	111	88.7
Total Xylene	µg/L	3.0	<3.0	<3.0 | <3.0 | [NA]	<3.0 | <3.0 | [NA]	[NA]	[NA]
Naphthalene (value used in F2 calc)	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	<1.0 | <1.0 | [NA]	[NA]	[NA]
Surrogate Dibromofluoromethane	*%*		*135*	*113 | 136*	*113 | 136*	*130*	*133*
Surrogate Toluene-D8	*%*		*121*	*112 | 121*	*112 | 122*	*119*	*121*
Surrogate 4-Bromofluorobenzene	*%*		*122*	*108 | 123*	*108 | 124*	*122*	*122*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-020 | Semi-volatile TRH (Water) | Batch BFF3989

Analyte	Units	PQL	Blank	LCS %
TRH C10-C14	µg/L	50	<50	80.2
TRH C15-C28	µg/L	100	<100	85.3
TRH C29-C36	µg/L	100	<100	111
TRH >C10-C16	µg/L	50	<50	69.1
TRH >C16-C34 (F3)	µg/L	100	<100	89.6
TRH >C34-C40 (F4)	µg/L	100	<100	97.8
Surrogate o-Terphenyl	*%*		*63.2*	*73.2*

Batch QC Comments: [2]

ORG-022_PAH | Polycyclic Aromatic Hydrocarbons (Water) | Batch BFF3989

Analyte	Units	PQL	Blank	LCS %
Naphthalene	µg/L	0.10	<0.10	65.0
Acenaphthylene	µg/L	0.10	<0.10	[NA]
Acenaphthene	µg/L	0.10	<0.10	65.5
Fluorene	µg/L	0.10	<0.10	65.7
Phenanthrene	µg/L	0.10	<0.10	63.3
Anthracene	µg/L	0.10	<0.10	[NA]
Fluoranthene	µg/L	0.10	<0.10	70.0
Pyrene	µg/L	0.10	<0.10	65.7
Benzo(a)anthracene	µg/L	0.10	<0.10	[NA]
Chrysene	µg/L	0.10	<0.10	65.8
Benzo(b,j,k)fluoranthene	µg/L	0.20	<0.20	[NA]
Benzo(a)pyrene	µg/L	0.10	<0.10	68.0
Indeno(1,2,3-c,d)pyrene	µg/L	0.10	<0.10	[NA]
Dibenzo(a,h)anthracene	µg/L	0.10	<0.10	[NA]
Benzo(g,h,i)perylene	µg/L	0.10	<0.10	[NA]
Surrogate p-Terphenyl-D14	*%*		*94.1*	*76.1*

Batch QC Comments: [2]

Quality Control MFF0433

METALS-022 | Dissolved Low Level Metals (Water) | Batch BFF4032

Analyte	Units	PQL	Blank	DUP1 BFF4032-DUP1# Samp | QC | RPD %	LCS %	Spike % BFF4032-MS1#
Arsenic	µg/L	1.0	<1.0	12.4 | 12.8 | 2.89	111	98.5
Cadmium	µg/L	0.10	<0.10	<0.10 | <0.10 | [NA]	113	101
Chromium	µg/L	1.0	<1.0	5.04 | 5.18 | 2.78	111	96.3
Copper	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	109	90.5
Lead	µg/L	1.0	<1.0	<1.0 | <1.0 | [NA]	112	87.3
Nickel	µg/L	1.0	<1.0	16.4 | 16.8 | 2.55	110	88.6
Zinc	µg/L	1.0	<1.0	6.60 | 6.91 | 4.69	110	94.2

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-021 | Dissolved Low Level Metals (Water) | Batch BFF4034

Analyte	Units	PQL	Blank	DUP1 BFF4034-DUP1# Samp | QC | RPD %	DUP2 BFF4034-DUP2# Samp | QC | RPD %	LCS %	Spike % BFF4034-MS1#
Mercury	µg/L	0.050	<0.050	<0.050 | <0.050 | [NA]	<0.050 | <0.050 | [NA]	90.8	92.8

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

QC Comments

Identifier	Description
[1]	Duplicate %RPD may be flagged as an outlier to routine laboratory acceptance, however, where one or both results are <10*PQL, the RPD acceptance criteria increases exponentially.
[2]	Unable to perform all QC according to our internal guidelines due to the limited amount of sample(s) available for testing.

Envirolab Services Pty Ltd
ABN 37 112 535 645 - 002
25 Research Drive Croydon South VIC 3136
ph +61 3 9763 2500
melbourne@envirolab.com.au
www.envirolab.com.au

Sample Receipt Advice MFF0433

Client Details

Client	JK Environments
Attention	Harley Wang

Sample Login Details

Your Reference	E36120PW
Envirolab Reference	MFF0433
Date Sample Received	25/06/2024
Date Instructions Received	25/06/2024
Date Final Results Expected	01/07/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
Number of Samples	1 Water
Turnaround Time	4 Days
Temperatures / Cooling Methods	5.7°C Ice Pack

Additional Info

Sample storage - waters are routinely disposed at approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Where no sampling date has been supplied for some or all samples, the date of sample receipt has been used as the associated sampling date. The sampling dates are used to assess compliance to recommended Technical Holding Times.

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).

Please direct any queries to:

Pamela Adams

Phone	03 9763 2500
Email	padams@envirolab.com.au

Chris De Luca

Phone	03 9763 2500
Email	cdeluca@envirolab.com.au

Analysis underway, details on the following page

Sample Receipt Advice MFF0433

Analysis Grid

The • indicates the testing you have requested. ***THIS IS NOT A REPORT OF THE RESULTS.***

	Combination 3 (D)
MFF0433-01 Water | 21/06/2024 WDUP102	•

Suite Details

Suite Name	Suite Analyses
Combination 3 (D) | Water	vTRH&MBTEXN, sTRH, PAH, As - Dissolved (LL), Cd - Dissolved (LL), Cr - Dissolved (LL), Cu - Dissolved (LL), Hg - Dissolved, Ni - Dissolved (LL), Pb - Dissolved (LL), Zn - Dissolved (LL)

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: **E36120PW** 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: **Harley Wang** hwang@jkenvironments.com.au

Location: Campbelltown

Sampler: AD

Sample Preserved in Esky on Ice

	Date Sampled	Lab Ref:	Sample Number	Sample Containers	PID	Sample Description	Combo 3	EC/pH	OCP (Trace level)	Imidacloprid (Trace level)	BTEX	Combo 3 (total metals)						
1	21/06/2024		MW2	4x amber, 4x BTEX, 1x HNO3, 1x PVC	0	Water	X	X	X	X								
2	21/06/2024		MW4	4x amber, 4x BTEX, 1x HNO3, 1x PVC	0.1	Water	X	X	X	X								
3	21/06/2024		MW6	4x amber, 4x BTEX, 1x HNO3, 1x PVC	0	Water	X	X	X	X								
4	21/06/2024		WDUP101	4x amber, 4x BTEX, 1x HNO3	NA	Duplicate	X		X	X								
1	21/06/2024		WDUP102	2x amber, 2x BTEX, 1x HNO3	NA	Duplicate	X				Please send to Envirolab VIC							
5	21/06/2024		TB-W101	2x amber, 2x BTEX, 1x HNO3	NA	Trip Blank						X						
6	21/06/2024		TS-W101	1x BTEX	NA	Trip Spike					X							

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 354595
Date Received: 21.06.24
Time Received: 15:10
Received By: TT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Envirolab Services
25 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500
Job No: MFF0433
Date Received: 25/6/24
Time Received: 12.45
Received By: GS
Temp: Cool/Ambient 5.7
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):

All analysis PQLs to ANZECC (2000) Detection Limits Please

Sample Containers:
G1 - 500mL Amber Glass Bottle
V - BTEX Vial H - HNO3 Wash PVC
PVC - HDPE Plastic Bottles

Relinquished By: HW	Date: 21/06/2024	Time: 12:00pm	Received By: ELS TT	Date: 21.06.24 15:10

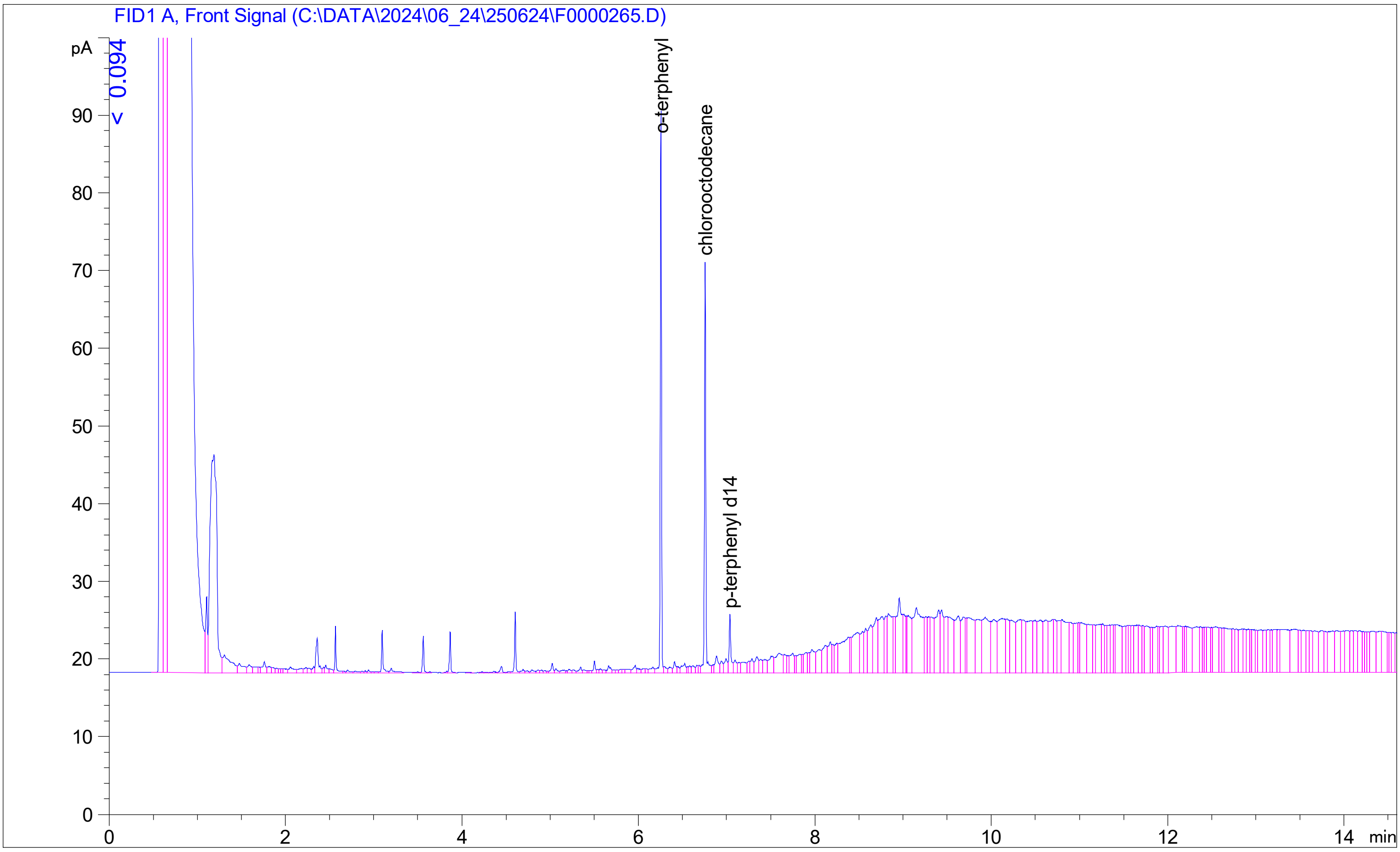
Shann Tolk
ELSSYD
1030
24/6/24

TRH Chromatographs and Laboratory Interpretation

Data File C:\DATA\2024\06_24\250624\F0000265.D
Sample Name: s354641-15

===

Acq. Operator : Seq. Line : 265
Acq. Instrument : GC#4 Location : Vial 69
Injection Date : 29/06/2024 5:20:19 PM Inj : 1
Inj Volume : 1 µl
Acq. Method : C:\CHEM32\1\METHODS\NEPM JF.M
Last changed : 31/08/2022 4:11:25 PM
Analysis Method : C:\METHODS\2024\06_24\250624-F PROCESSING.M
Last changed : 01/07/2024 10:52:09 AM
(modified after loading)
Method Info : FAST TPH WITH 15M HP5 COLUMNS



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External Standard Report

===

Sorted By : Signal
Calib. Data Modified : 26/06/2024 10:43:32 AM
Multiplier: : 1.0000
Dilution: : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal

RetTime [min]	Type		Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
6.256	VV	I	70.87715	1.24789e-1	8.84467		o-terphenyl
6.759	VV		59.07792	1.58294e-1	9.35166		chlorooctodecane
7.039	VV	I	10.89096	1.33177e-1	1.45043		p-terphenyl d14

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
Totals :				19.64676		

Summed Peaks Report

Signal 1: FID1 A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.735	4.725	33.19051	4.3788
NEPM >C10-C16	3.230	5.385	35.97180	4.7458
TRH C15-C28	4.725	8.425	270.71743	38.3266
NEPM >C16-C34	5.385	9.820	836.23337	118.3889
TRH C29-C36	8.425	10.640	913.41382	133.1894
NEPM >C34-C40	9.820	13.590	1384.37554	201.8627
Totals :				500.8922

Final Summed Peaks Report

Signal 1: FID1 A, Front Signal

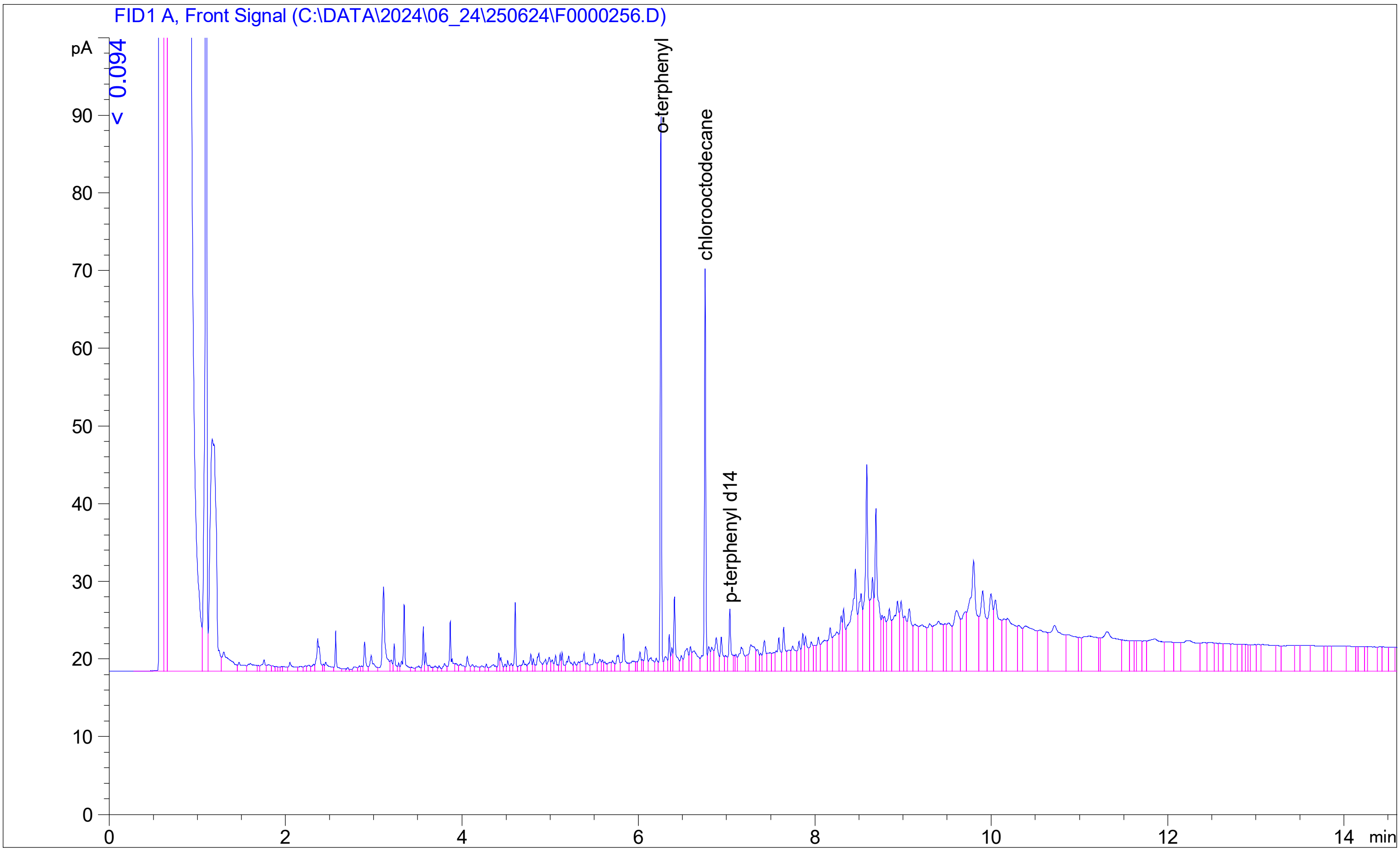
Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	33.19051	4.3788
NEPM >C10-C16	35.97180	4.7458
TRH C15-C28	270.71743	38.3266
NEPM >C16-C34	836.23337	118.3889
TRH C29-C36	913.41382	133.1894
NEPM >C34-C40	1384.37554	201.8627
o-terphenyl	70.87715	8.8447
chlorooctodecan	59.07792	9.3517
p-terphenyl d14	10.89096	1.4504
Totals :		520.5390

*** End of Report ***

Data File C:\DATA\2024\06_24\250624\F0000256.D
Sample Name: s354641-65

===

Acq. Operator   :   Seq. Line : 256
Acq. Instrument : GC#4   Location : Vial 60
Injection Date : 29/06/2024 2:17:59 PM   Inj : 1
                                                   Inj Volume : 1 µl
Acq. Method   : C:\CHEM32\1\METHODS\NEPM JF.M
Last changed   : 31/08/2022 4:11:25 PM
Analysis Method : C:\METHODS\2024\06_24\250624-F PROCESSING.M
Last changed   : 01/07/2024 10:51:36 AM
                  (modified after loading) (Current integration events modified)
Method Info   : FAST TPH WITH 15M HP5 COLUMNS



===
External Standard Report
===

Sorted By   :   Signal
Calib. Data Modified :   26/06/2024 10:43:32 AM
Multiplier: :   1.0000
Dilution: :   1.0000
Do not use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, Front Signal

RetTime [min]	Type		Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
6.256	VV	I	70.11102	1.24789e-1	8.74906		o-terphenyl
6.759	VV		60.07056	1.58294e-1	9.50879		chlorooctodecane
7.038	VV	I	13.62142	1.33177e-1	1.81406		p-terphenyl d14

Data File C:\DATA\2024\06_24\250624\F0000256.D
Sample Name: s354641-65

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [mg/L]	Grp	Name
Totals :				20.07192		

===
Summed Peaks Report
===

Signal 1: FID1 A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	2.735	4.725	133.47836	17.6098
NEPM >C10-C16	3.230	5.385	135.48554	17.8746
TRH C15-C28	4.725	8.425	471.02786	66.6853
NEPM >C16-C34	5.385	9.820	1130.41995	160.0381
TRH C29-C36	8.425	10.640	1005.31881	146.5906
NEPM >C34-C40	9.820	13.590	996.98006	145.3746
Totals :				554.1730

===
Final Summed Peaks Report
===

Signal 1: FID1 A, Front Signal

Name	Total Area [pA*s]	Amount [mg/L]
TRH C10-C14	133.47836	17.6098
NEPM >C10-C16	135.48554	17.8746
TRH C15-C28	471.02786	66.6853
NEPM >C16-C34	1130.41995	160.0381
TRH C29-C36	1005.31881	146.5906
NEPM >C34-C40	996.98006	145.3746
o-terphenyl	70.11102	8.7491
chlorooctodecan	60.07056	9.5088
p-terphenyl d14	13.62142	1.8141
Totals :		574.2449

*** End of Report ***

Harley Wang

From: Timothy Toll <TToll@envirolab.com.au>
Sent: Tuesday, 2 July 2024 5:45 PM
To: Anna Bui; Harley Wang; Nick Sarlamis; Organics NSW
Cc: Samplereceipt
Subject: RE: Results for Registration 354641 E36120PW - Campbelltown
Attachments: Envirolab Hydrocarbon Reference Library.pdf; s354641-15.pdf; s354641-15d.pdf; s354641-65.pdf

This message originated outside the JKG network. If this looks to be from a staff member, it is likely to be malicious (spam/phish attack). Do not click links of open attachments unless you recognise the sender and know the content is safe.

Hi, Harley
Both samples resemble Asphalt when compared to the Envirolab reference library.

Please note that any interpretations provided are purely subjective opinions/suggestions and therefore are NOT confirmation of the presence of particular hydrocarbon products.

Kind Regards,

Timothy Toll | Chemist (FAS) | Envirolab Services

Great Science. Great Service.

12 Ashley Street Chatswood NSW 2067
T 612 9910 6200
E TToll@envirolab.com.au | **W** www.envirolab.com.au

From: Anna Bui <ABui@envirolab.com.au>
Sent: Tuesday, July 2, 2024 2:42 PM
To: Harley Wang <HWang@jkenvironments.com.au>; Nick Sarlamis <NSarlamis@envirolab.com.au>; Organics NSW <OrganicsNSW@envirolab.com.au>
Cc: Samplereceipt <Samplereceipt@envirolab.com.au>
Subject: RE: Results for Registration 354641 E36120PW - Campbelltown

No worries, Harley. I'll add the below additional analysis into the A-job.

@Organics NSW can you please assist with the requested chromatograms below?

Thanks,

Kind Regards,

Anna Bui | Customer Service | Envirolab Services

Great Science. Great Service.

12 Ashley Street Chatswood NSW 2067
T 612 9910 6200
E ABui@envirolab.com.au | **W** www.envirolab.com.au

Follow us on: LinkedIn | Facebook | Twitter

Samples will be analysed per our T&C's.

From: Harley Wang <HWang@jkenvironments.com.au>
Sent: Tuesday, July 2, 2024 1:19 PM
To: Nick Sarlamis <NSarlamis@envirolab.com.au>
Cc: Samplereceipt <Samplereceipt@envirolab.com.au>
Subject: RE: Results for Registration 354641 E36120PW - Campbelltown

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.

Hi Nick,

Can I please order the following additional analysis (possibly in the same A job as the additional asbestos AS analysis):

1. pH and cation exchange capacity (CEC) (cmolc/kg) for BH102 (0.18-0.3) sample number: 2;
2. pH and CEC (cmolc/kg) for BH111 (0.02-0.3) sample number: 12; and
3. pH and CEC (cmolc/kg) for BH132 (0.03-0.2) sample number: 58.

In addition, can you please send over the TRH chromatograms and lab interpretations for the following:

- BH112 (0.02-0.2) sample number: 15; and
- BH134 (0-0.1) sample number: 65.

Many thanks!

Regards
Harley Wang
Senior Environmental Scientist

T: +61 2 9888 5000
D: +61 468 678 416
E: HWang@jkenvironments.com.au
www.jkenvironments.com.au

PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Nick Sarlamis <NSarlamis@envirolab.com.au>
Sent: Monday, July 1, 2024 6:37 PM
To: Harley Wang <HWang@jkenvironments.com.au>
Subject: Results for Registration 354641 E36120PW - Campbelltown

---

Please refer to attached for:
a copy of the Certificate of Analysis
a copy of the COC/paperwork received from you
an Excel or .csv file containing the results

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)[23] methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (1991)[24]. 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;

[23] US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)
[24] 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. <u>Comparability</u>

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. <u>Blanks</u>

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. <u>Matrix Spikes</u>

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%.

$$\frac{(\text{Spike Sample Result} - \text{Sample Result}) \times 100}{\text{Concentration of Spike Added}}$$

I. <u>Surrogate Spikes</u>

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. <u>Duplicates</u>

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

The results for the field QA/QC samples are detailed in the laboratory summary tables (Table Q1 and Table Q2) attached to the investigation report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report. A summary of the field QA/QC samples collected and analysed for this investigation is provided in the following table:

Sample Type	Number Analysed	Frequency (of Sample Type)
Intra-laboratory duplicate (soil)	3	Approximately 8% of primary samples
Inter-laboratory duplicate (soil)	3	As above
Intra-laboratory duplicate (groundwater)	1	Approximately 33% of primary samples
Inter-laboratory duplicate (groundwater)	1	As above
Trip spikes Soil Water	 2 1	Two soil and one water for the investigation to demonstrate adequacy of preservation, storage and transport methods.
Trip blanks Soil Water	 2 1	Two soil and one water for the investigation to demonstrate adequacy of storage and transport methods.
Rinsate (soil hand auger)	1	One for the investigation to demonstrate adequacy of decontamination methods.

3. <u>Data Assessment Criteria</u>

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 and published drinking water guidelines for waters.

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 with our standard sampling procedures. 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.

JKE note that the temperature on receipt of water samples was reported to be up to 18°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. It is also noted though that the primary laboratory received the groundwater samples on the same day as sampling, so the samples had only just commenced cooling. On this basis, JKE is of the opinion that the temperatures reported on the Sample Receipts in some cases are unlikely to be reliable or representative of the overall batch, or are reflective of the 'attempt to cool'. The good handling practices are further supported by the trip spike recovery results for both soil and water (discussed further below) which reported adequate recovery in the range of 97% to 119%.

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.

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, except for the insecticide imidacloprid which was reported in nanograms per litre (ng/L). These concentrations were converted to µg/L for consistency in the summary tables and comparison with the published SAC.

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 is 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.

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:

- Elevated RPDs were reported for TRH F2 in SDUP101/BH134 (0-0.1m);
- Elevated RPDs were reported for TRH F3 and several heavy metals (arsenic, chromium and nickel) in SDUP102/BH136 (0-0.1m);
- Elevated RPDs were reported for TRH F4 and several heavy metals (copper and nickel) in SDUP103/BH127 (0-0.1m);
- Elevated RPDs were reported for several PAHs compounds (phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, benzo(b,j+k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene and benzo(g,h,i)perylene) and heavy metals (arsenic, copper, lead, nickel and zinc) for SDUP104/BH118 (0-0.1m);
- Elevated RPDs were reported for TRH F3 and several heavy metals (mercury and zinc) in SDUP105/BH123 (0-0.1m);
- Elevated RPDs were reported for chromium in SDUP106/BH128 (0-0.1m); and
- Elevated RPDs were reported for TRH F3 and zinc in WDUP102/MW6.

Values outside the acceptable limits have been attributed to sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices, and the values close to the PQLs. Some results are also due to concentrations being reported close to the PQL which compromises the validity of the RPDs as a good reflection of precision. All data were considered in the risk assessment process, therefore, the minor QA non-conformances were not considered to be unacceptable.

Trip Blanks

During the investigation, two soil trip blanks were placed in the esky during sampling and transported back to the laboratory. The soil trip blank analysis results were all less than the PQLs with the exception of chromium, lead and zinc with reported concentrations of up to 4mg/kg, 3mg/kg and 4mg/kg. Low level metals concentrations are typical in washed sand which is utilised as blank material. In JKE's experience, the concentrations reported were consistent with background concentrations in a sand matrix and were not indicative of cross-contamination. On this basis, cross contamination between samples that may have significance for data validity did not occur.

One water trip spike was placed in the esky during sampling and transported back to the laboratory. The water trip blank analysis results were all less than the PQLs with the exception of TRH F2 with reported concentrations of up to 150µg/L. The detectable concentration of the light fraction TRH is most likely attributed to trihalomethanes. These compounds are breakdown products from the chlorination process and are common in potable water (utilised as the blank material) at the concentration reported (the Australian drinking water guideline for total trihalomethanes is 250µg/L).

Rinsate

Trace concentrations of TRH F1 and copper were detected in the rinsate sample. The laboratory report 354641 indicated that the detection of the light fraction TRH was due to the presence of trihalomethanes in the samples. The low copper concentrations detected in the rinsate sample are typical of regional potable water conditions. The reported rinsate concentrations indicated that cross-contamination artefacts associated with sampling equipment were not present and the potential for cross-contamination to have occurred was low.

Trip Spikes
The results ranged from 97% to 119% across both soil and water, 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:

Laboratory report 354641:

- 500mL samples for asbestos gravimetric analysis volumes from samples 354641-67 (BH135 0.04-0.3m), 88 (BH103 0.22-0.4m), 90 (BH109 0.15-0.2m) and 93 (BH114 0.15-0.2m) were below the minimum recommended samples volume as per the NEPM (2013).

Laboratory report 354641-A:

- A portion of the samples for asbestos analysis from samples 354641-A-53 (BH129 0.08-0.3m), 354641-A-55 (BH130 0.4-0.7m), 354641-A-56 (BH131 0.06-0.3) and 354641-A-59 (BH132 0.2-0.3m) were subsampled from jars or bags in accordance with the laboratory subsampling procedure.

Laboratory report 354595:

- The positive TRH results in the trip blank sample was consistent with the use of plastic containers with no hydrocarbon profile; and
- Imidacloprid analysis was undertaken by MPL Laboratory under report number: PFF1499.

The reported non-conformances were minor and were not considered to adversely impact the data accuracy.

C. DATA QUALITY 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. There is a potential for groundwater conditions to change over time, however, in light of the generally low contaminant concentrations reported and the AEC identified, groundwater data comparability is considered to be acceptable, particularly in light of the recommendations made in the DSI report.

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.

Appendix H: Field Work Documents

JKEnvironments

Client:	AV Jennings	Job No.:	E36120PW
Project:	Proposed Mixed Use Development	Well No.:	MW2
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	Depth (m):	10.09

WELL FINISH DETAILS

Gatic Cover ☒ Standpipe ☐ Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	Petrol Pump	SWL – Before (m):	4.79
Date:	17/6/24	Time – Before:	2:15PM
Undertaken By:	JTL	SWL – After (m):	8.57
Total Vol. Removed:	~32L	Time – After:	3:55PM
PID Reading (ppm):	0.0		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
1.0	22.6	4.3	2572	7.17	91.6
2.0	21.8	4.8	2664	7.09	82.5
4.0	21.3	6.4	2646	7.03	78.0
6.0	22.6	2.9	2769	7.00	79.9
8.0	23.0	2.6	2863	6.98	81.3
10.0	22.8	3.4	2824	7.03	81.3
12.0	22.3	3.9	2798	7.04	79.1
14.0	22.2	4.3	2781	7.09	76.5
16.0	22.2	5.1	2783	7.10	74.2
18.0	22.5	4.3	2794	7.05	74.2
20.0	22.0	5.1	2734	7.13	73.5
22.0	22.1	5.1	2766	7.07	73.9
24.0	22.9	4.9	2798	7.07	74.0
26.0	22.5	4.1	2833	7.03	74.4
28.0	22.4	4.0	2824	7.03	74.3
30.0	22.5	4.2	2834	7.03	74.0
32.0	22.7	4.2	2820	7.05	73.2

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

YSI Used: YSI 9

Tested By:	JTL	**Remarks:**
Date Tested:	17/06/2024	- 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
Checked By:	HW	
Date:	15/07/2024	

JKEnvironments

Client:	AV Jennings	**Job No.:**	E36120PW
Project:	Proposed Mixed Use Development	**Well No.:**	MW4
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	**Depth (m):**	10.27

WELL FINISH DETAILS

Gatic Cover ☒ Standpipe ☐ Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	Development Pump	**SWL – Before (m):**	3.97
Date:	18/6/24	**Time – Before:**	12:05 PM
Undertaken By:	JTL	**SWL – After (m):**	9.37
Total Vol. Removed:	42L	**Time – After:**	1:10 PM
PID Reading (ppm):	0.1		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)	
0.5	19.5	2.8	3214	7.01	205.3	
2	19.8	2.6	3657	6.77	202.5	
4	19.7	0.7	3880	6.76	190.6	
6	19.8	0.8	3853	6.74	182.5	
8	19.9	0.4	3848	6.74	173.1	
10	20.0	0.5	3805	6.76	163.5	
12	20.1	0.6	3872	6.82	155.9	
14	20.2	1.4	3487	6.87	148.1	
16	20.2	1.1	3625	6.82	143.7	
18	20.2	0.6	3765	6.75	134.7	
20	20.0	0.5	3788	6.75	126.3	Empty Bucket
22	19.9	1.6	3740	6.96	55.6	
24	19.9	2.3	3636	6.93	51.6	
26	19.8	3.0	3731	6.87	38.4	
28	19.6	2.8	3812	6.85	7.6	
30	20.0	2.5	3655	6.96	45.4	Slow out put
32	19.9	3.3	3488	7.01	44.3	
34	20.2	4.6	3333	7.06	-23.0	
36	20.1	4.8	3183	7.06	-3.2	
38	20.2	5.5	3112	7.11	13.1	
40	20.8	4.9	3083	7.10	34.9	
42	20.6	4.5	3171	7.04	42.0	

Comments: Odours (YES / NO) NAPL/PSH (YES / NO) Sheen (YES / NO) Steady State Achieved ~~YES~~ / NO

YSI Used: YSI 4

Tested By:	JTL	**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
Date Tested:	18/6/24	
Checked By:	HW	
Date:	15/07/2024	

JKEnvironments

Client:	AV Jennings	**Job No.:**	E36120PW
Project:	Proposed Mixed Use Development	**Well No.:**	MW6 1/2
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	**Depth (m):**	20.12

WELL FINISH DETAILS

	Gatic Cover ☒	Standpipe ☐	Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:	Petrol Pump	**SWL – Before (m):**	4.355
Date:	17/06/2024	**Time – Before:**	9:00
Undertaken By:	JTL / AD	**SWL – After (m):**	9.65
Total Vol. Removed:	~180L	**Time – After:**	12:00
PID Reading (ppm):	0.1		

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
0.5	19.5	2.4	1776	7.14	73.2
5	17.5	2.3	3544	6.83	-21.4
10	20.4	0.2	4042	6.76	-27.8
15	21.4	0.6	4543	6.77	-12.4
20	21.0	0.2	444[illegible]	6.76	-19.0
25	21.3	0.1	3279	6.95	-33.3
30	21.2	0.2	3469	6.87	-30.9
35	21.4	0.1	2896	7.01	-36.4
40	21.4	0.1	2780	7.01	-37.1
45	21.5	0.2	2721	7.01	-38.6
50	21.6	0.1	2695	7.05	-38.4
55	21.6	0.6	2691	7.05	-37.7
60	21.6	0.5	2670	7.05	-36.4
65	21.5	0.3	2720	7.06	10.8
70	21.5	0.3	2623	7.06	9.0
75	21.6	0.3	2582	7.06	7.3
80	21.6	0.3	2553	7.06	6.3
85	21.6	0.5	2510	7.09	3.0
90	21.6	0.5	2508	7.09	2.5
95	21.6	0.5	2502	7.08	1.4
100	21.7	0.5	2513	7.07	0.5
105	21.6	0.7	2495	7.08	-1.4
110	21.7	0.7	2493	7.09	-1.7

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO) Steady State Achieved (YES / NO)

YSI Used: YSI 4

Tested By:	JTL	**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
Date Tested:	17/06/2024	
Checked By:	HW	
Date:	15/07/2024	

JKEnvironments

Client:	AV Jennings	**Job No.:**	E36120PW
Project:	Proposed Mixed Use Development	**Well No.:**	MW6 2/2
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	**Depth (m):**	20.12

WELL FINISH DETAILS

Gatic Cover ☒ Standpipe ☐ Other (describe) ☐

WELL DEVELOPMENT DETAILS

Method:		**SWL – Before (m):**	
Date:		**Time – Before:**	
Undertaken By:		**SWL – After (m):**	
Total Vol. Removed:		**Time – After:**	
PID Reading (ppm):			

Comments:

DEVELOPMENT MEASUREMENTS

Volume Removed (L)	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
115	21.7	0.6	2499	7.06	-2.1
120	21.7	0.6	2508	7.07	-3.6
125	21.7	0.6	2523	7.08	-3.3
130	21.7	0.7	2508	7.09	-3.7
135	21.7	0.8	2491	7.09	-3.6
140	21.7	0.6	2496	7.07	-3.5
145	21.7	0.7	2480	7.07	-3.0
150	21.7	0.9	2485	7.09	-2.8
155	21.8	0.6	2505	7.09	-3.3
160	21.7	0.7	2504	7.07	-3.7
165	21.7	0.3	2481	7.08	-1.9
170	21.7	1.4	2464	7.09	-1.9
175	21.7	0.9	2478	7.08	-1.9
180	21.7	0.8	2499	7.07	-2.4
~~185~~					
~~190~~					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO) Steady State Achieved (YES / NO)

YSI Used: YSI 4

Tested By:	JTL	**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
Date Tested:	17/06/24	
Checked By:	HW	
Date:	15/07/2024	

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Client:	AV Jennings	**Job No.:**	E36120PW
Project:	Proposed Mixed Use Development	**Well No.:**	MW2
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	**Depth (m):**	10·09

WELL FINISH

X	**Gatic Cover**		**Standpipe**		**Other (describe)**

WELL PURGE DETAILS:

Method:	Peristaltic Pump	**SWL – Before:**	4·95
Date:	21/06/24	**Time – Before:**	9:05
Undertaken By:	AD	**Total Vol Removed:**	~ 6L
Pump Program No:	–	**PID (ppm):**	0

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (μS/cm)	pH	Eh (mV)
9:14	5·10	0·5		20·9	4·6	2218	6·93	170·5
9:18	5·31	1·5		21·6	3·8	2256	6·91	142·0
9:22	5·47	2·5		21·8	3·8	2259	6·90	130·1
9:26	5·54	3·5		21·7	3·5	2249	6·91	123·4
9:30	5·56	4·0		21·3	3·1	2231	6·91	117·6
9:34	5·55	4·5		20·8	2·8	2193	6·91	112·7
9:38	5·55	5·0		20·5	2·6	2191	6·91	108·6
			Started sampling					

Comments: Odours (YES / NO) NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

Sampling Containers Used: 4 **x glass amber,** 4 **x BTEX vials,** 1 **x HNO3 plastic, x H2SO4 plastic,** 1 **x unpreserved plastic**

YSI used: 4

Tested By: Alexis Diodati	**Remarks:**
Date Tested: 21/06/24	- Steady state conditions
Checked By: HW	- difference in the pH less than 0.2 units, difference in conductivity less than 10%
Date: 15/07/2024	10% and SWL stable/not in drawdown

JKEnvironments

Client:	AV Jennings	**Job No.:**	**E36120PW**
Project:	Proposed Mixed Use Development	**Well No.:**	MW4
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	**Depth (m):**	10.27

WELL FINISH

X	**Gatic Cover**		**Standpipe**		**Other (describe)**

WELL PURGE DETAILS:

Method:	Peristaltic Pump	**SWL – Before:**	3.95
Date:	21/06/24	**Time – Before:**	10:59
Undertaken By:	AD	**Total Vol Removed:**	~5.5
Pump Program No:	–	**PID (ppm):**	0

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
11:06	3.99	0.5		18.5	3.5	2853	6.73	55.1
11:10	4.04	1.5		18.8	3.1	2833	6.72	56.1
11:14	4.08	2.5		19.0	3.1	2897	6.72	60.0
11:18	4.07	3.0		18.9	3.0	2888	6.73	62.9
11:22	4.07	3.5		18.7	3.0	2883	6.74	65.0
11:26	4.07	4.0		18.8	3.1	2874	6.75	66.5
			Started sampling					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO) Sheen (YES / NO) Steady State Achieved (YES / NO)

Sampling Containers Used: 4 **x glass amber,** 4 **x BTEX vials,** 1 **x HNO3 plastic, x H2SO4 plastic,** 1 **x unpreserved plastic**

YSI used: 4 WDUP101 = 4 x amber, 4 x BTEX, 1 x HNO3

Tested By: Alexis Diodati	**Remarks:**
Date Tested: 21/06/24	- Steady state conditions
Checked By: HW	- difference in the pH less than 0.2 units, difference in conductivity less than 10%
Date: 15/07/2024	10% and SWL stable/not in drawdown

JKEnvironments

Client:	AV Jennings	**Job No.:**	E36120PW
Project:	Proposed Mixed Use Development	**Well No.:**	MW6
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW	**Depth (m):**	20.12

WELL FINISH

X	Gatic Cover		Standpipe		Other (describe)

WELL PURGE DETAILS:

Method:	Peristaltic Pump	**SWL – Before:**	4.34
Date:	21/06/24	**Time – Before:**	10:10
Undertaken By:	AD	**Total Vol Removed:**	~5L
Pump Program No:	-	**PID (ppm):**	0

PURGING / SAMPLING MEASUREMENTS

Time (min)	SWL (m)	Vol (L)	Notes	Temp (°C)	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)
10:18	4.42	0.5		20.5	0.8	1868	6.99	73.9
10:22	4.43	1.5		20.9	0.5	1911	6.96	54.4
10:26	4.43	2.5		21.0	0.5	1927	6.95	41.7
10:30	4.43	3.5		21.0	0.3	1937	6.94	33.0
			Started sampling					

Comments: Odours (YES / NO), NAPL/PSH (YES / NO), Sheen (YES / NO), Steady State Achieved (YES / NO)

Sulphuric odour

Sampling Containers Used: 4 x glass amber, 4 x BTEX vials, 1 x HNO3 plastic, x H2SO4 plastic, 1 x unpreserved plastic

YSI used: 4 WDUP102 = 2x amber, 2xBTEX, 1xHNO3

Tested By: Alexis Diodati	**Remarks:**
Date Tested: 21/06/24	- Steady state conditions
Checked By: HW	- difference in the pH less than 0.2 units, difference in conductivity less than 10%
Date: 15/07/2024	10% and SWL stable/not in drawdown

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PID FIELD CALIBRATION FORM

Client:	AV Jennings
Project:	Proposed Mixed Use Development
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW
Job Number:	E36120PW

PID

Make: MiniRaeLite+	Model: PGM7300	Unit: PID3	Date of last factory calibration: 13/02/24
Date of calibration: 17/06/24		Name of Calibrator: AD	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 100·1 ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			

PID

Make: MiniRaeLite+	Model: PGM7300	Unit: PID3	Date of last factory calibration: 13/02/24
Date of calibration: 18/06/24		Name of Calibrator: JTL	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 101·8 ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			

PID

Make: MiniRaeLite+	Model: PGM7300	Unit: PID3	Date of last factory calibration: 13/02/24
Date of calibration: 21/06/24		Name of Calibrator: AD	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 101·5 ppm		Error in measured reading: ± ppm	
Measured reading Acceptable (Yes/No):			

PID

Make: MiniRaeLite+	Model: PGM7300	Unit: PID3	Date of last factory calibration: 13/02/24
Date of calibration: 24/06/24		Name of Calibrator:	
Calibration gas: Iso-butylene		Calibration Gas Concentration: 100.0 ppm	
Measured reading: 101·6 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):			

JKEnvironments

WATER QUALITY METER CALIBRATION FORM

Client:	AV Jennings
Project:	Proposed Mixed Use Development
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW
Job Number:	E36120PW

DISSOLVED OXYGEN

Make: ~~[illegible]~~	Model: YSI 4
Date of calibration: 17/6/24	Name of Calibrator: JTL
Span value: 70% to 130%	
Measured value: 116%	
Measured reading Acceptable (Yes/No):	

pH

Make:	Model:	
Date of calibration: 17/6/24	Name of Calibrator: JTL	
Buffer 1: Theoretical pH = 7.01± 0.01	Expiry date: 17/12/24	Lot No: CG290623
Buffer 2: Theoretical pH = 4.01± 0.01	Expiry date: 13/11/24	Lot No: CC180523
Measured reading of Buffer 1: 7.00		
Measured reading of Buffer 2: 4.00		
Slope:	Measured reading Acceptable (Yes/No):	

EC

Make:	Model: YSI 4	
Date: 17/6/24	Name of Calibrator: JTL	Temperature: 11.9 °C
Calibration solution: AR conductivity solution	Expiry date: 17/12/24	Lot No: DB111023
Theoretical conductivity at temperature (see solution container): 1062 µS/cm		
Measured conductivity: 1056 µS/cm	Measured reading Acceptable (Yes/No):	

REDOX

Make:	Model: YSI 4	
Date of calibration: 17/6/24	Name of Calibrator:	
Calibration solution: Hanna Instruments	Expiry date: 11/24	Lot No: 8976
Theoretical redox value: 240mV		
Measured redox reading: 240.3 mV	Measured reading Acceptable (Yes/No):	

JKEnvironments

WATER QUALITY METER CALIBRATION FORM

Client:	AV Jennings		
Project:	Proposed Mixed Use Development		
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW		
Job Number:	E36120PW		
DISSOLVED OXYGEN			
Make:		Model: YSI 4	
Date of calibration: 18/6/24		Name of Calibrator: JTL	
Span value: 70% to 130%			
Measured value: 100			
Measured reading Acceptable (Yes/No):			
pH			
Make:		Model: YSI 4	
Date of calibration: 18/6/24		Name of Calibrator: JTL	
Buffer 1: Theoretical pH = 7.01± 0.01		Expiry date: 17/12/24	Lot No: CG290623
Buffer 2: Theoretical pH = 4.01± 0.01		Expiry date: 13/11/24	Lot No: CC180523
Measured reading of Buffer 1: 7.00			
Measured reading of Buffer 2: 4.00			
Slope:		Measured reading Acceptable (Yes/No):	
EC			
Make:		Model: YSI 4	
Date: 18/6/24	Name of Calibrator: JTL		Temperature: 13.0°C
Calibration solution: AR conductivity solution		Expiry date: 17/12/24	Lot No: DB 111023
Theoretical conductivity at temperature (see solution container): 1089 µS/cm			
Measured conductivity: 1090 µS/cm		Measured reading Acceptable (Yes/No):	
REDOX			
Make:		Model: YSI 4	
Date of calibration: 18/6/24		Name of Calibrator: JTL	
Calibration solution: Hanna instruments		Expiry date: 11/24	Lot No: 8976
Theoretical redox value: 240mV			
Measured redox reading: 240.2 mV		Measured reading Acceptable (Yes/No):	

JKEnvironments

WATER QUALITY METER CALIBRATION FORM

Client:	AV Jennings		
Project:	Proposed Mixed Use Development		
Location:	1 Kellicar Road, CAMPBELLTOWN, NSW		
Job Number:	E36120PW		
DISSOLVED OXYGEN			
Make: YSI4		Model:	
Date of calibration: 21/06/24		Name of Calibrator: AD	
Span value: 70% to 130%			
Measured value: 93%			
Measured reading Acceptable (Yes/No):			
pH			
Make: YSI4		Model:	
Date of calibration: 21/06/24		Name of Calibrator: AD	
Buffer 1: Theoretical pH = 7.01± 0.01		Expiry date: 12/24	Lot No: CG290623
Buffer 2: Theoretical pH = 4.01± 0.01		Expiry date: 05/25	Lot No: CC180523
Measured reading of Buffer 1: 7.07			
Measured reading of Buffer 2: 4.08			
Slope:		Measured reading Acceptable (Yes/No):	
EC			
Make: YSI4		Model:	
Date: 21/06/24	Name of Calibrator: AD		Temperature: 15.4 °C
Calibration solution: Conductivity standard		Expiry date: 12/24	Lot No: DB111023
Theoretical conductivity at temperature (see solution container): 1143 µS/cm			
Measured conductivity: 1141 µS/cm		Measured reading Acceptable (Yes/No):	
REDOX			
Make: YSI4		Model:	
Date of calibration: 21/06/24		Name of Calibrator: AD	
Calibration solution: ORP Test Solution		Expiry date: 05/28	Lot No: 8976
Theoretical redox value: 240mV			
Measured redox reading: 238 mV		Measured reading Acceptable (Yes/No):	

Appendix I: UCL Calculation Sheets

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.110/07/2024 10:15:55 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRH >C16-C34 (F3)

General Statistics

Total Number of Observations	40	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	50	Mean	99.75
Maximum	460	Median	50
SD	94.64	Std. Error of Mean	14.96
Coefficient of Variation	0.949	Skewness	2.135

Normal GOF Test

Shapiro Wilk Test Statistic	0.607	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.94	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.425	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.139	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	125	95% Adjusted-CLT UCL (Chen-1995)	129.8
		95% Modified-t UCL (Johnson-1978)	125.8

Gamma GOF Test

A-D Test Statistic	7.435	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.449	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.141	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.89	k star (bias corrected MLE)	1.765
Theta hat (MLE)	52.77	Theta star (bias corrected MLE)	56.51
nu hat (MLE)	151.2	nu star (bias corrected)	141.2
MLE Mean (bias corrected)	99.75	MLE Sd (bias corrected)	75.08
		Approximate Chi Square Value (0.05)	114.8
Adjusted Level of Significance	0.044	Adjusted Chi Square Value	113.9

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	122.7	95% Adjusted Gamma UCL (use when n<50)	123.7

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.94	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.446	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.139	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	3.912	Mean of logged Data	4.315
Maximum of Logged Data	6.131	SD of logged Data	0.688

Assuming Lognormal Distribution

95% H-UCL	119.2	90% Chebyshev (MVUE) UCL	127.5
95% Chebyshev (MVUE) UCL	142.6	97.5% Chebyshev (MVUE) UCL	163.6
99% Chebyshev (MVUE) UCL	204.8		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	124.4	95% Jackknife UCL	125
95% Standard Bootstrap UCL	124.8	95% Bootstrap-t UCL	132
95% Hall's Bootstrap UCL	131.4	95% Percentile Bootstrap UCL	126
95% BCA Bootstrap UCL	128		
90% Chebyshev(Mean, Sd) UCL	144.6	95% Chebyshev(Mean, Sd) UCL	165
97.5% Chebyshev(Mean, Sd) UCL	193.2	99% Chebyshev(Mean, Sd) UCL	248.6

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	165		

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

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

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

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

Appendix J: Guidelines and Reference Documents

Acid Sulfate Soils Management Advisory Committee (ASSMAC), (1998). Acid Sulfate Soils Manual

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

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

Heads of EPAs Australia and New Zealand (HEPA), (2020). PFAS National Environmental Management Plan Version 2.0 - January 2020

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, (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

NSW EPA, (2022). *Sampling design part 1 - application*, 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