Hume FOGO Facility

Targeted site investigation

Transport Canberra and City Services

11 July 2023

→ **The Power of Commitment**

Project name	FOGO and MRF Project Delivery Services						
Document title	Hume FOGO Facility | Targeted site investigation						
Project number	12540460						
File name	12540460-RPT-FOGO TSI.docx						
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	R Stuckey	H Luo	*on file*	K Earle	*on file*	11/07/2023

GHD Pty Ltd ABN 39 008 488 373

16 Marcus Clarke Street, Level 7

Canberra, ACT 2601, Australia

T +61 2 6113 3200 | **F** +61 2 4979 9988 | **E** cbrmail@ghd.com | **ghd.com**

© GHD 2023

This document is and shall remain the property of GHD. The document may only be used for the purpose for which it was commissioned and in accordance with the Terms of Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

The Power of Commitment

Executive Summary

Background

ACT NoWaste is proposing to develop a new food organics and garden organics FOGO facility (the 'proposal') in Hume to strengthen the Territory's circular economy and help meet Territory and Federal Government landfill diversion and resource recovery targets. The proposal is defined as the construction and operation of a new FOGO facility with the capacity to receive up to 70,000 tonnes per year of FOGO for in-vessel composting.

The preliminary site investigation (PSI) (GHD, 2022a) indicated that further investigation was required given the lack of existing contamination information on the proposal site and to assess the potential contamination risk to human health in aim to support concept design and planning approval.

Objective

The objective of the targeted site investigation (TSI) is to collect soil contamination data from the proposal site to assess the potential contamination risk to human health in aim to support concept design and planning approval.

Scope of work

The scope of this TSI included:

- Health, safety and environment documentation,
- Test pits at nine locations to a target depth of 1.5 metres,
- Hand auger at 11 locations to a target depth of 1.5 metres,
- Stockpile sampling at two stockpile locations,
- Laboratory analysis of the contaminants of potential concern (COPC),
- Preparation of details and outcomes of the TSI (this report).

This TSI only covers soil contamination investigation outlined in the SAQP (GHD, 2022b).

Key findings

Key finding of the TSI include:

- The soil profile at test pit locations comprised natural alluvial or residual material consisting of brown to tan or pale orange sandy clay or clayey sand, with some silt or gravel.
- The soil profile at hand auger locations comprised soil of similar natural material with exception of HA07 consisting of gravelly sand towards the target depth. Groundwater was encountered at HA02 at approximately 0.8 metres.
- The soil profile of stockpile 1 in the western portion of the proposal site comprised of dark brown to brown sandy clay, with protruding bricks and some pipes near the base of the stockpile which were embedded within the soil.
- The soil profile of stockpile 2 in the eastern portion of the proposal site comprised of dark brown to brown sandy clay.
- No visual or olfactory evidence of contamination were encountered during the sampling.
- No suspected ACM was encountered at ground surface or stockpile surface at and surrounding sampling locations.
- Asbestos was not detected in any of analysed soil samples.
- Concentrations of contaminants of potential concern (COPCs) in analysed soil samples were below adopted health screening criteria.

Conclusion

Subject to the objectives in Section 1.1 and limitations in Section 1.4, it is considered a low likelihood that soil contamination is present on the Hume FOGO site that will pose an unacceptable risk to construction or future operation works at the Hume FOGO site.

Recommendations

Considering the historical land use of the site and surrounding land use including active landfill, and limited scope work of this TSI, we recommend that continued contamination investigation and assessment and soil waste classification occur during the design and construction phases of the project, consistent with standard industry design practice. Noting the adjacent landfill site, any additional contamination investigation should consider media of soil, groundwater, and potential ground gas.

Contents

1. Introduction 1
1.1 Objective 1
1.2 Purpose 1
1.3 Scope of work 1
1.4 Limitations 2
2. Environmental setting 3
2.1 Site identification 3
2.2 Heritage 3
2.3 Environmental setting 3
2.4 Summary of site use and history and preliminary conceptual site model 4
3. Data quality objectives 6
4. Assessment guidelines 8
4.1 Adopted assessment criteria 8
5. Sampling and analysis plan and methodology 9
5.1 Sampling locations 9
5.2 Investigation timeline 9
5.3 Methodology 9
5.4 Soil sampling 10
5.5 Laboratory analysis 10
5.6 Data quality assurance and quality control procedures 11
5.6.1 Field QA/QC procedures 11
5.6.2 Laboratory QA/QC 12
5.7 Deviations from SAQP 13
6. Investigation results 15
6.1 General ground profile 15
6.2 Field observations 15
6.3 Stockpile soil profile 15
6.4 Analytical results 16
6.5 QA/QC evaluation 16
7. Findings, conclusion and recommendations 17
7.1 Refined conceptual site model 17
7.2 Key findings of the investigation 17
7.3 Conclusions 18
7.4 Recommendations 18
8. References 19

Table index

Table 2.1	Site information summary	3
Table 2.2	Environmental setting	3
Table 2.3	Preliminary CSM	5
Table 3.1	Data quality objectives	6
Table 4.1	Rationale for adopted criteria for soil assessment	8
Table 5.1	Soil sampling design	9
Table 5.2	Completed works	9
Table 5.3	Soil sampling methodology	10
Table 5.4	laboratory analysis scheme	10
Table 5.5	Field QC sampling and analysis program	12
Table 5.6	Laboratory QC procedures	12
Table 5.7	Acceptable laboratory RPD ranges	13
Table 5.8	Deviations from SAQP	13
Table 6.1	Stockpile soil profile	15
Table 6.2	Summary of laboratory analytical results	16
Table 7.1	Refined conceptual site model	17
Table 7.2	DQO conclusions	18

Appendices

Appendix A	Figures
Appendix B	Field equipment calibration sheet
Appendix C	Test pit and borehole logs
Appendix D	Analytical results
Appendix E	Chain of custody and laboratory analytical certificates
Appendix F	Evaluation of QA/QC procedures

1. Introduction

The Australian Capital Territory (ACT) Government is working to reduce waste to landfill and increase resource recovery. The strategic direction for the management of waste in the Territory is set out in the 'ACT Waste Management Strategy 2011-25' (ACT Government, 2011). The strategy commits the ACT Government to minimise organic waste going to landfill and recovering organic waste resources. It also sets a target of increasing the rate of resource recovery to over 90 percent by 2025, with no recoverable waste sent to landfill.

The Federal Government also has a target of halving the amount of organic waste sent to landfill for disposal by 2030, as set out in the 'National Waste Policy Action Plan' (DEE, 2019).

A waste feasibility study was established in mid-2015 to identify a pathway towards achieving the ACTs waste management targets and examine options to drive better resource recovery. In 2018, the ACT Government released the final recommendations from the study as the 'Waste Feasibility Study: Roadmap and Recommendations Discussion Paper' (ACT NoWaste, 2018). Key recommendations from this were to identify a site and establish an organics progressing facility to process food organics and garden organics (FOGO) and the implementation of a kerbside FOGO collection.

The 'ACT Climate Change Strategy 2019 to 2025' (ACT Government, 2019) also identifies FOGO collection for all households and the investigation of organic waste processing as key priorities. An opt-in FOGO collection pilot is currently underway in the ACT (Belconnen), which has so far diverted more than 480 tonnes of material from landfill (ACT Government, 2022).

The "proposal" is defined as the construction and operation of a new FOGO facility with the capacity to receive up to 70,000 tonnes per year of FOGO for in-vessel composting.

There is currently no processing facility within the ACT that can accept and process FOGO material. ACT NoWaste intends to develop a new FOGO facility (the 'proposal') in Hume to strengthen the Territory's circular economy and help meet Territory and Federal Government landfill diversion and resource recovery targets.

The preliminary site investigation (PSI) (GHD, 2022a) indicated that further investigation was required given the lack of existing information on the proposal site and to assess the potential contamination risk to human health in aim to support concept design and planning approval.

1.1 Objective

The objective of the targeted site investigation (TSI) is to collect soil contamination data from the Proposal site to assess the potential contamination risk to human health in aim to support concept design and planning approval.

1.2 Purpose

The purpose of this TSI is to document the outcomes of the investigation detailed in the sampling analysis and quality plan (SAQP) (GHD, 2022b).

1.3 Scope of work

The scope of this TSI is as follows:

- Health, safety and environment documentation
- Test pits at nine locations to a target depth of 1.5 metres
- Hand auger at 11 locations to a target depth of 1.5 metres
- Stockpile sampling at two stockpile locations
- Laboratory analysis of the contaminants of potential concern (COPC)
- Preparation of details and outcomes of the TSI investigation (this report).

This TSI only covers soil contamination investigation outlined in the SAQP (GHD, 2022b). The proposal site location is shown in Figure 8.1, Appendix A.

1.4 Limitations

This report: has been prepared by GHD for Transport Canberra and City Services and may only be used and relied on by Transport Canberra and City Services for the purpose agreed between GHD and Transport Canberra and City Services as set out in Section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than Transport Canberra and City Services arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on information obtained from, and testing undertaken at or in connection with, specific sample points. Site conditions at other parts of the site may be different from the site conditions found at the specific sample points.

Investigations undertaken in respect of this report are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this report.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

If this report is required to be accessible in any other format, this can be provided by GHD upon request and at an additional cost if necessary.

2. Environmental setting

2.1 Site identification

A summary of the site information is provided in Table 2.1. The proposal site location is shown in Appendix A.

Table 2.1 Site information summary

Address	6 Recycling Road, Hume, ACT 2620
Block and Section	Hume: Block 5 Section 26
Current Land Use	A large proportion of the site is vacant. There is a fenced area on the southern boundary (approximately 3,000 m^2) that is used to store vehicles and was not accessible during the site walkover.
Size m^2	42,957 (Reference source: https://actmapi.act.gov.au)
Land Zoning	IZ1: General Industry
Immediate Surrounds	The site is bordered to the: – North: Surface water drainage line (Dog Trap Creek) and retention basin – South: Recycling Road and, across the road, the Materials Recovery Facility – East: John Cory Road and farmland – West: Mugga Lane landfill
Broad description of location	– The site is located to the north of the Monaro Highway in an industrial and rural area located approximately 12.5 km south of Canberra City. – West of the site is Mugga Lane landfill which includes a number of surface water and leachate management dams. – South of the site is Mugga Lane Solar Park and ACT Skip Hire and Soft Landing Mattress Recycling – The site has previously been utilised as a materials recycling facility with recycled material treated and stored at the site.

2.2 Heritage

The following is a summary of the Cultural Heritage Assessment (CHA) recommendations. The CHA was undertaken out by Navin Officer Heritage Consultants (NOHC) in June 2022.

- Three previously recorded Aboriginal heritage sites with potential archaeological deposit (PAD) and two areas of archaeological potential have been previously identified within the proposal site.
- The proposed updated boundary of PAD at the north-west portion of the site should be tested through a program of geomorphological gridded auger survey to plot the presence of the upper calcareous layer.
- A program of subsurface testing should be undertaken at the PAD in the eastern portion of the site to determine the nature of the deposit.

The TSI sampling excluded these areas and cleared soil from the heritage investigations was used for sampling where required.

2.3 Environmental setting

Information provided in the following section has been obtained from the preliminary site investigation (PSI) (GHD, 2022a) and available mapping as referenced in Table 2.2.

Table 2.2 Environmental setting

Information	Details
Topography	The site area varies between 614 – 611 metres Australia Height Datum (AHD), according to topographic data from the Environmental Protection and Sustainable Development Directorate (EPSDD). The regional topography is mostly flat in the

Information	Details
	southern area with a slight fall from south to north. The northern area has a relatively steep incline (maximum elevation 730 AHD) on the northern buffer boundary.
Soils and landscapes	According to the Atlas of Australian Soils (CSIRO, 2011) the site is within the Williamsdale Landscape. This unit is characterised by Kandosols which are associated with yellow leached earths in intermediate drainage areas and hard neutral and/or alkaline yellow mottled soils in poorly drained areas. Within the one-kilometre site buffer the Disturbed Terrain Landscape is present in the north-west area and the Burra landscape in the northern buffer. Sodosol soils are present in the western area of the report buffer. According to the Atlas of Australian Acid Sulfate Soils the acid sulphate soils class in the site area is Class C and the works would have an extremely low probability of encountering acid sulphate containing soils (CSIRO, 2011). Approximately 400 m west of the site the soils are Class B soils are present and has a low probability of encountering acid sulphate containing soils.
Hydrology	Surface water is expected to follow the local topography and generally flow northwards. There is a small dam located north of the site, between the creek and the site boundary. Run-off from the site is expected to flow out of the north and north-eastern boundary of the site and then flow westwards into the dam, based on natural topography. There is a natural creek, Dog Trap Creek, located to the north of the site (the closest point being approximately 25 metres) which is a tributary of Jerrabomberra creek which lay approximately three kilometres to the north-east of the site..
Geology	The 1:100,000 scale Canberra geological map (Abell, 1992) indicated the site is situated on Silurian aged Deakin Volcanics – Rhyodacitic ignimbrite and minor volcaniclastic and argillaceous sediments.
Hydrogeology	The site and surrounding area located on fractured or fissured, extensive aquifers described to have low to moderate productivity. The site is on Symonston Hydrogeological Landscape (HGL) which is characterised by low land salinity and moderate salt store and mobility. There are no ACT Government boreholes on or near the site.

2.4 Summary of site use and history and preliminary conceptual site model

Based on the review of site history information provided in the PSI (GHD, 2022a), the site was used as a recycling storage area with recycled material stored at the site in 2009. The storage was cleared by 2017 and now consists of mostly grassland. There are stockpiles of unknown material also stored at the site however it cannot be determined where they were sourced from. The PSI concluded that the previous site activities (i.e. material recycling) has potential to contaminate soil and / or groundwater.

Preliminary conceptual site model (CSM) was developed by PSI and included in Table 2.3.

Table 2.3 Preliminary CSM

Sources	Analytes	Pathway	Receptor	Potentially complete?
On site (within the proposal site boundary) APEC 1: Vehicle storage area / historic waste storage area APEC 2: Uncontrolled fill stockpiling APEC 3: Uncontrolled fill APEC 4: Historic waste recovery facilities storage activities	Asbestos containing material (ACM) Heavy metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) Organochlorine pesticides (OCP) Organophosphate pesticides (OPP) Polychlorinated biphenyls (PCB) Petroleum hydrocarbons including TRH, BTEX, PAH, Phenols	Direct contact or inhalation with contaminated soil, fill materials or groundwater. Vapour inhalation. Ingestion of soils and dust. Direct contact with groundwater. Migration of contaminated groundwater of offsite. Discharge of groundwater to surface water bodies. Vapour inhalation.	FOGO facility construction workers Future FOGO facility workers Ecological receptors Aquatic ecological receptors	Possible
Off site (outside the proposal site boundary) APEC 5: Mugga landfill site	Heavy metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) OCP OPP PCB TRH, BTEX, PAH, Phenols Nutrients Dissolved methane Methane Carbon dioxide			

3. Data quality objectives

A process for establishing data quality objectives for a site investigation has been defined in the NEPM *Guideline on Site Characterisation* (NEPM, 2013). The Data Quality Objective (DQOs) process has been applied to the site investigation, as described below, to ensure that data collection activities are appropriate and achieve the project objectives. The DQO process involves seven steps as follows:

- Step 1: State the problem
- Step 2: Identify the decision
- Step 3: Identify inputs to the decision
- Step 4: Define the study boundaries
- Step 5: Develop a decision rule
- Step 6: Specify limits on decision errors
- Step 7: Optimise the design for obtaining data

The seven DQO steps for this project are defined in Table 3.1.

Table 3.1 Data quality objectives

Step	Description
Step 1 State the problem	ACT Government are seeking approval for a proposed FOGO facility. The problem is that the potential contamination risk during the construction and operation of the proposal is presently unknown and the following questions need to be answered: What is the likelihood that contamination is present on the FOGO site that may be encountered during construction works and future operation of the proposal site? If contamination is present, what level of potential risk does it pose to the proposal site construction workers or future FOGO facility operation workers?
Step 2 Identify the decision / goal of the study	The decisions are issues that need to be addressed arising from Step 1. These are: What are potential sources of contamination within the proposed FOGO site? Do the results of the sampling and analysis indicate potential risk to human health? If contamination is present, will the presence of any contamination affect the future use of the site or pose a risk to the identified human receptors? Is there a need for further assessment, remediation and/or management?
Step 3 Identify the information inputs	The inputs to the decision represent the information and data that will be collected as part of the assessment. These include a review of field notes, analytical results and comparison of analytical results with adopted human health assessment criteria.
Step 4 Define the study boundaries	*Define the spatial boundaries of the decision* The spatial boundary of the investigation is shown in Figure 8.1, Appendix A. *Define the temporal boundaries of the decision* fieldwork for the investigation was completed in April and June 2023, respectively *Define the scale of decision making* The scale of the decision making is limited to the boundaries of the site.
Step 5 Develop decision rules	The key decision rule is - Are contaminants of concern present at concentrations above the adopted assessment criteria? If no, then potential risks to receptors is considered low. If yes, further assessment or management of the potential risks to potential receptors may be required.
Step 6 Tolerable limits on decision errors	Data generated must be appropriate to allow decisions to be made with confidence. Specific limits for this assessment have been adopted in accordance with the appropriate guidance.

Step	Description
Step 7 Optimisation data collection process	This step involves identifying the most resource effective assessment design required to satisfy the DQOs. GHD has engaged specialist personnel with previous experience in contaminated site assessment to cover all aspects of the assessment.

4. Assessment guidelines

The framework for the contamination assessment made herein was developed in accordance with the guidelines made or adopted by the ACT Environment Protection Authority (EPA). These guidelines include, but are not limited to the following:

- ACT (2019) *Information Sheet 4- Requirements for the reuse and disposal of contaminated soil in the ACT*
- ACT (2020) *Information Sheet 11 – EPA Report Submission Requirements*
- ACT EPA (2021) *Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes*
- ACT Government (2017) *Contaminated Sites Environment Protection Policy* – EPA December 2017
- Heads of the EPAs Australia and New Zealand (HEPA) (2020), *PFAS National Environmental Management Plan (NEMP), Version 2.0*
- NEPC (2013) *National Environmental Protection (Assessment of Site Contamination) Amended Measure (NEPM)*

The guideline values will be used to evaluate the potential risk of the contamination to human health.

4.1 Adopted assessment criteria

Soil investigation levels for all soil locations have been adopted from assessment criteria are presented in Table 4.1 below.

Table 4.1 Rationale for adopted criteria for soil assessment

Receptor	Guidelines adopted	Assessment criteria	Rationale
Human health	National Environmental Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)* (NEPC, 2013)	Presence / absence	Presence or absence of asbestos is considered appropriate for initial screening of asbestos in soil at the proposal site.
	National Environmental Protection Council, *National Environment Protection (Assessment of Site Contamination) Measure (NEPM)* (NEPC, 2013)	Health screening levels (HSLs)	The NEPM (2013) presents HSLs for fuel derived petroleum hydrocarbons, which are generic criteria based on a series of reasonably conservative assumptions in order to be protective of human health for a variety of land use types. For the purposes of selecting health-based investigation levels for this study area, industrial/commercial land uses have been adopted. The NEPM (2013) HSL for fuel derived petroleum products are also adopted as initial screening criteria to assess the potential risk to intrusive maintenance workers in construction trenches and excavations. The HSL were selected because they are more stringent than other IMW published values.
		Health investigation levels (HILs)	For non-petroleum hydrocarbons, the NEPM 2013 HILs have been adopted for commercial industrial purposes. The HILs take into account direct contact pathways, including incidental ingestion and dermal contact.
	PFAS National Environmental Management Plan (NEMP) (HEPA , 2020)	Human health screening value, industrial / commercial (mg/kg)	The PFAS NEMP includes human health screening criteria for PFAS.

5. Sampling and analysis plan and methodology

5.1 Sampling locations

Intrusive investigation was undertaken in a combination of grid-based fashion with target of previously identified APECs. Investigation sample locations are shown on Figure 8.2, included in Appendix A.

Intrusive investigations comprised the excavation of test pits and hand augers to a target depth of 1.5 metres. Hand augers were used in sensitive heritage areas that had previously been mapped within the Cultural Heritage Assessment to minimise disturbance and potential of unexpected finds. Hand augers are less intrusive than the excavator but still provide adequate information regarding the soil profile and for the purposes of this TSI. Due to rocks and compacted clay, only one out of 11 hand auger locations reached the target depth.

Table 5.1 Soil sampling design

Targeted area	Sampling locations	Sampling location ID	Investigation method
APEC 1	3	TP18, TP19 and TP20	Test pit
APEC 2	Stockpile 1: 11 Stockpile 2: 3	Stockpile 1: SP01_01 to SP01_11 Stockpile 2: SP02_01 to SP02_03	Hand tool
APEC 3	22	TP12 and TP13	Test pit
APEC 4	4	TP14, TP16 HA06 and HA07	Test pit Hand auger
Site wide outside APEC	11	TP15 and TP17 HA01 to HA05 HA08 to HA11	Test pit Hand auger

5.2 Investigation timeline

Given that the soil sampling was implemented partially in conjunction with heritage investigation, the soil sampling was completed in two different periods summarised in Table 5.2.

Table 5.2 Completed works

Date	Completed works
17 April 2023	All nine test pit locations (TP12 to TP20)
18 April 2023	All 14 stockpile sample locations (SP01_01 to SP01_11 to SP02_01 to SP02_03)
2 June 2023	Four hand auger locations; HA08 to HA11
5 June 2023	Seven hand auger locations: HA01 to HA07

5.3 Methodology

Underground service utility clearance was conducted by Drew Misko from Australian Subsurface on 17 April 2023. Test pit and hand auger locations were cleared where practicable. Dense vegetation over portions of the proposal site made it difficult to access areas particularly towards the north of the proposal site near the creek.

The works were completed across four different days due to heritage constraints, see Table 5.2. All locations were backfilled with the excavated material removed from that particular sample location, returned to level and compacted with the excavator bucket (test pit locations) or with a shovel (hand auger locations).

5.4 Soil sampling

Soil sampling methodology is summarised in Table 5.3

Table 5.3 Soil sampling methodology

Method	Number of sampling locations	Sampling procedures
Test pits	9	Sampling was conducted at the surface, 0.5 m bgl, 1 m bgl and target depth of 1.5 m bgl or at refusal. Soil samples were collected directly from the bucket of the excavator. Clean nitrile gloves were worn when collecting samples and replaced between samples to prevent cross-contamination. Test pits were reinstated with the spoil generated from the test pitting works and the ground surface will be returned to its original state.
Hand auger	11	Sampling was conducted at the surface, 0.5 m bgl, 1 m bgl and 1.5 m bgl of target depth or at refusal. Soil samples were collected directly from the auger when lifted to ground surface. Clean nitrile gloves were worn when collecting samples and replaced between samples to prevent cross-contamination.
Stockpile sampling	14	A shovel was used to dig approximately 300 millimetres below the stockpile surface. Samples were collected from areas the shovel had not has direct contact with using nitrile gloves.

The following procedures were applied to all sampling methods

- All soil samples were visually inspected, and all field observations and subsurface conditions recorded on field lithological logs, including presence of fill materials and any visual or olfactory indications of contamination.
- GHD submitted samples for analysis as per the sampling program provided in Section 5.5.
- Unanalysed samples were retained on-hold for a period of three months in case additional laboratory analysis is required.
- Photographs were taken of the soil and sampling locations (where possible).

5.5 Laboratory analysis

All collected stockpile samples and selected subsurface soil samples were couriered to Eurofins Canberra, which is a National Association of Testing Authorities (NATA) accredited laboratory, under standard GHD chain of custody protocols.

Laboratory analysis of soil samples are summarised in Table 5.4

Table 5.4 laboratory analysis scheme

Method	Number of locations	Primary samples analysed	Analysis
Test pits	9	18	– Asbestos containing material (ACM) – Heavy metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) – Total recoverable hydrocarbons (TRH) – Benzene, toluene, ethylbenzene and xylene (BTEX) – Polycyclic aromatic hydrocarbons (PAH) – Chlorinated hydrocarbons (CHC) – Organochlorine pesticides (OCP)
Stockpile	14	14	
Hand auger	11	21	

Method	Number of locations	Primary samples analysed	Analysis
			– Organophosphate pesticides (OPP) – Polychlorinated biphenyls (PCB) – Per- and poly- fluoroalkyl substances (PFAS)

5.6 Data quality assurance and quality control procedures

The quality assurance/quality control (QA/QC) procedures are based on NEPM (2013), HEPA (2020) PFAS NEMP. QA involves all of the actions, procedures, checks and decisions undertaken to ensure the representativeness and integrity of samples and accuracy and reliability of analytical results (NEPM 2013). QC involves protocols to monitor and measure the effectiveness of QA procedures.

5.6.1 Field QA/QC procedures

5.6.1.1 Field quality assurance procedures

All field work were conducted with reference to the NEPM (2013) and GHD's Standard Field Operating Procedures, which ensures all samples are collected by a set of uniform and systematic methods, as required by GHD's QA system.

Key requirements of these procedures are listed below. Specific requirements for handling PFAS samples to prevent cross-contamination are detailed in HEPA (2020). These requirements will be complied with during sampling:

- **Sampling team:** The sampling team followed the methodologies presented within Section 5.4. All field staff involved in sampling were experienced in their respective fields and considered competent in accordance with GHD's QA system.
- **Sample collection, handling and transport:** Soil samples were collected using new disposable nitrile gloves for each sample. Specific requirements for handling PFAS samples such as not using water-proofed clothing and having food wrappers on-site, as per the HEPA (2020) guidelines, were adhered to at all times. Samples were placed into laboratory provided Teflon-free sample jars and once collected, will be placed on ice (contained in plastic bags) in insulated containers. Samples were delivered to the laboratory within the recommended holding times for the respective analytes.
- **Sample identification procedures:** Each sample was labelled with the sample location, date, project identification number and sampler's initials. Sample details were entered onto a chain of custody (CoC) form that accompanies each batch of samples to the laboratory.
- **CoC information requirements:** A CoC form was be completed and forwarded to the testing laboratory with each batch of samples.
- **Collection of QC samples:** Field QC samples were collected as detailed in Appendix F.
- **Calibration of field equipment:** Prior to use in the field, all field instruments (i.e. photoionisation detector) were calibrated by the equipment supplier to optimise the accuracy of the measurements taken.

5.6.1.2 Field quality control sampling

The ASC NEPM (NEPC, 2013) and the PFAS NEMP (HEPA, 2020) outline a recommended approach to QC sampling. The QC samples collected during the investigation are described as follows and their results are included in Appendix F.

- Intra-laboratory duplicate: Intra-laboratory duplicate / blind duplicate samples are used to identify the variation in the analyte concentration between samples from the same sampling point.
- Inter-laboratory duplicate: Inter-laboratory duplicate / split duplicate samples provide an indication of the repeatability of the results between laboratories.

– Field blanks: Field blanks are used to estimate contamination of a sample during the collection procedure. Field blanks are collected by pouring laboratory supplied deionised water into laboratory supplied bottles on-Site.
– Rinsate blanks: Rinsate blank samples are used to estimate the amount of contamination introduced by the re-use of sampling equipment. They are obtained by pouring laboratory supplied deionised water over decontaminated sampling equipment (e.g. hand auger) into laboratory supplied bottles.

Table 5.5 Field QC sampling and analysis program

Sample type	Analysis	Rationale	Acceptance criteria
Inter-laboratory duplicate samples	Metals, BTEXN, TRH, PAH	One duplicate sample for every 20 samples	0-30%
	Standard PFAS suite	One duplicate sample for every 10 samples	
Intra-laboratory duplicate samples	Metals, BTEXN, TRH, PAH	One duplicate sample for every 20 samples	0-30%
	Short PFAS suite	One duplicate sample for every 10 samples	
Field and rinsate blanks	Metals, PAH, PFAS suite	One field blank and one rinsate blank per day per piece of reusable equipment.	<LOR

In the instance that acceptance criteria listed above are not met, further assessment of the data is required to determine the impact that this has on the interpretation of the data.

5.6.1.3 Relative percentage difference calculations

Inter- and Intra-laboratory duplicate samples will be assessed by calculating the relative percentage difference (RPD) between the primary, blind and split samples in accordance with the procedure described in AS 4482.1 – 2005 (Standards Australia 2005). Calculation of RPDs provides a quantitative measure of the accuracy of the analytical results reported.

RPD results will be considered acceptable if they are less than or equal to 30%. The only exception to this is when concentrations within the primary and blind or split sample are less than ten times the laboratory LOR. In this case, a greater RPD value is considered acceptable.

5.6.2 Laboratory QA/QC

5.6.2.1 Laboratory analytical programs

Laboratory methods to be used by the primary and secondary laboratories will be suitable for environmental contaminant analysis and are based on established internationally recognised procedures (refer to Section 5.6.2.2). Each of the laboratories is NATA accredited for the proposed analysis.

5.6.2.2 Laboratory quality control procedures

The following laboratory QC procedures will be used during the investigation.

Table 5.6 Laboratory QC procedures

Laboratory duplicate samples	The analysis of a laboratory derived duplicate sample from the process batch, at a rate equivalent to 1 in 10 samples per analytical batch, or one sample per batch if less than 10 samples are analysed in a batch. A laboratory duplicate provides data on the analytical precision and reproducibility of the analytical results. The permitted ranges for the RPD of laboratory duplicates are dependent on the magnitude of the results in comparison to the level of reporting as shown in Table 5.7.
Method blank samples	The analysis of a sample that is as free as possible of the analytes of interest but has been prepared the same as the samples under investigation. The analysis is to

	ascertain if laboratory reagents, glassware and other laboratory consumables contribute to the observed concentration of analytes in the process batch. If below the maximum acceptable method blank (20% of the practical quantitation limit), the contribution is subtracted from the gross analytical signal for each analysis before calculating the sample analyte concentration. The method blank should return analyte concentrations as 'not detected'.
Laboratory control samples	The analysis of either a reference material or a control matrix fortified with analytes representative of the analyte class. The purpose of laboratory control spike samples is to monitor method precision and accuracy independent of the sample matrix. Typically, the percentage recovery of the laboratory control spike sample is compared to the dynamic recovery limits based on the statistical analysis of the processed laboratory control spike sample analysis. Recoveries should lie between 70% and 130%.
Matrix spike samples	The analysis of one or more replicate portions of samples from the batch, after fortifying the additional portion(s) with known quantities of the analyte(s) of interest. The percentage recovery of target analyte(s) from matrix spike samples is used to determine the bias of the method in the specific sample matrix. Recoveries should lie between 70% and 130%.
Surrogate spike samples	Surrogate spike samples are samples with known additions of known amounts of compounds, which are similar to the analytes of interests in terms of extractability, recovery through clean-up procedures and response to chromatographic or other measurement. Surrogate compounds may be alkylated or halogenated analogues or structural isomers of analytes of interest. The purpose of surrogate spikes, which are added immediately before the sample extraction step, is to provide a check for every analysis that no gross processing errors have occurred, which could have led to significant analyte loss or faulty calculation. Recoveries should lie between 50% and 150%.
Internal standards	Internal standards are known additions of known amounts of compounds which are not found in real samples, will not interfere with quantification of analytes of interest and may be separately and independently quantified. The purpose of internal standards in instrumental techniques is to provide independent signals, which serve to check the consistency of the analytical step. Internal standards are often used for organic compounds and some inorganic compounds.

Table 5.7 Acceptable laboratory RPD ranges

Magnitude of result	Acceptable RPD range
< 10 x limit of reporting (LOR)	No limits
10 - 20 x LOR	0% - 50%
> 20 x LOR	0% - 20%

5.7 Deviations from SAQP

Deviations from the SAQP are outlined in Table 5.8 below.

Table 5.8 Deviations from SAQP

SAQP	Deviation	Reasoning or details where practical
6 duplicates for PFAS from APEC 1	4 duplicates	Two of the missing samples were QC samples sent to ALS which were lost in transit. Eurofins confirmed via email the samples were sent off however ALS has no records – as such they were not analysed.
3 duplicates for PFAS from APEC 2	1 duplicate	-
40 primary and 4 duplicate samples analysed for	39 primary and 5 duplicate	-

SAQP	Deviation	Reasoning or details where practical
metals, TRH, BTEXN and PAH (APEC 1, 3 and 4)		
20 primary samples analysed for OCP, OPP, PCB, PFAS (APEC 1, 3 and 4)	23 primary samples were analysed for OCP/OPP/PCB and 21 for PFAS	Additional samples analysed due to large amount collected and changes in soil profile.
11 hand augers and nine test pits to a target depth of 1.5 metres.	Ten hand auger and two test pits did not reach the target depths	Compacted soil or rocks were encountered which prevented the target depth from being reached.
3 samples from stockpile in the western portion and 11 samples from stockpile in the eastern portion	11 samples from stockpile in the western portion and 3 samples from stockpile in the eastern portion	The size of both stockpiles was much smaller than estimated. The stockpiles were re-estimate in size and are discussed in Section 6.3.
Two rinsate blank samples for metals and PAH	One rinsate sample was collected.	The hand auger was used across two days and a rinsate was taken on the final day after being decontaminated
One field blank	No field blanks were collected.	-

6. Investigation results

6.1 General ground profile

The ground conditions were relatively homogenous, the test pits typically comprising of natural alluvial or residual material consisting of brown to tan or pale orange sandy clay or clayey sand, with some silt or gravel. The hand auger locations consisted of very similar natural material with exception of HA07 consisting of gravelly sand towards the target depth. Groundwater was encountered at HA02 at approximately 0.8 metres.

Borehole logs for the HA and TP locations are presented in Appendix C.

6.2 Field observations

No olfactory evidence of contamination was noted in any of the investigation locations during the field work, however, scattered pieces of stray rubbish (such as hard and soft plastics) were observed on the surface. TP20 was noted to have a strong, rotting organic odour but no other indicators. Additionally, brick and piping were observed in the stockpile in the western portion of the site. No potential ACM fragments were identified within any of the sampling locations targeted.

A calibrated photo ionisation detector (PID) was used to screen soil samples for the presence of volatile organic compounds (VOC) within each of the soil samples. Samples were placed into a zip lock bag prior to PID readings. Select samples were tested with the PID and readings between 0.0 parts per million (ppm) and 1.9 ppm (TP12 1.2-1.5) of VOC were measured. TP12 had the highest readings overall between 1.6 ppm and 1.9 ppm whereas remaining TP were generally between 0.0 ppm and 1.3 ppm. HA measurements were less than 0.8 ppm. The difference in readings is likely due to the TP readings being taken within the vicinity of an active excavator which is likely to have contribute to hydrocarbons in the air.

PID calibration sheet was obtained for the program and is included in Appendix B.

6.3 Stockpile soil profile

Soil profile of stockpiles observed during the sampling is summarised in Table 6.1 .

The volume of the stockpiles was re-estimated during the TSI field investigation. The estimated volume of the stockpiles was considered to be significantly smaller than originally estimated. The new estimated volumes are presented in Table 6.1. The volumes may have been incorrectly estimated during the PSI visit due to uneven ground surface, dense vegetation making it difficult to discern the ground. The new measurements were based on footprint of the stockpile and approximation of height and only considered maximum height..

Table 6.1 Stockpile soil profile

Stockpile ID	Estimated volume (m^3)	Description	Evidence of contamination
Stockpile 1	30	Dark brown to brown sandy clay, with protruding bricks and some pipes near the base of the stockpile which were embedded within the soil. There were pieces of plastic around this stockpile, likely from the nearby Materials Recovery Facility	No odour, no staining, no suspected ACM
Stockpile 2	20	Dark brown to brown sandy clay	No odour, no staining, no suspected ACM

6.4 Analytical results

Analytical results tables of soil samples are included in Appendix D. Laboratory analytical certificates are included in Appendix E.

Assessment of analytical results of analysed soil samples are summarised in Table 6.2.

Table 6.2 Summary of laboratory analytical results

COPC	Stockpile soil sample	Subsurface soil samples
Asbestos	Not detected	Not detected
8 metals suite	Concentrations below the adopted health screening criteria	Concentrations below the adopted health screening criteria
TRH, BTEX, PAH	Concentrations below laboratory reporting limits and adopted health screening criteria	Concentrations below laboratory reporting limits and adopted health screening criteria
OC, OP, PCB	Concentrations below laboratory reporting limits and adopted health screening criteria	Concentrations below laboratory reporting limits and adopted health screening criteria
PFAS	Concentrations below laboratory reporting limits and adopted health and ecological screening criteria	Concentrations below laboratory reporting limits and adopted health and ecological screening criteria

In summary, no exceedances of adopted health screening criteria was reported in any of analysed soil samples.

6.5 QA/QC evaluation

GHD reviewed field sampling procedures and results of field and laboratory quality control samples. The quality assurance and quality control (QA/QC) evaluation is presented in Appendix F.

The evaluation concluded that the overall analytical results are representative of the characteristics of materials sampled and suitable for the purposes of this assessment.

Calibration certificates for the PID are included in Appendix B.

7. Findings, conclusion and recommendations

7.1 Refined conceptual site model

Based on the investigation data, the conceptual site model has been refined and summarised in Table 7.1.

Table 7.1 Refined conceptual site model

Sources	Pathway	Receptor	Pathway potentially complete
APEC 1: Vehicle storage area / historic waste storage area APEC 2: Uncontrolled fill stockpiling APEC 3: Uncontrolled fill APEC 4: Historic waste recovery facilities storage activities	– Direct contact or inhalation with contaminated soil, fill materials or groundwater. – Vapour inhalation – Ingestion of soils and dust – Direct contact with groundwater – Migration of contaminated groundwater of offsite – Discharge of groundwater to surface water bodies – Vapour inhalation	– FOGO facility construction workers – Future FOGO facility workers – Future intrusive maintenance workers	Incomplete – no exceedance of the adopted human health screening criteria reported in any of analysed soil samples.

7.2 Key findings of the investigation

Key findings of the TSI include:

- The soil profile at test pit locations comprised natural alluvial or residual material consisting of brown to tan or pale orange sandy clay or clayey sand, with some silt or gravel.
- The soil profile at hand auger locations comprised similar natural material with exception of HA07 consisting of gravelly sand towards the target depth. Groundwater was encountered at HA02 at approximately 0.8 metres.
- The soil profile of stockpile 1 in the western portion of the proposal site comprised of dark brown to brown sandy clay, with protruding bricks and some pipes near the base of the stockpile which were embedded within the soil.
- The soil profile of stockpile 2 in the eastern portion of the proposal site comprised of dark brown to brown sandy clay.
- No visual or olfactory evidence of contamination were encountered during the sampling.
- No suspected ACM was encountered at ground surface or stockpile surface at and surrounding sampling locations.
- Asbestos was not detected in any of analysed soil samples.
- Concentrations of COPCs in analysed soil samples were below adopted health screening criteria.

7.3 Conclusions

The DQO process described in Section 3 posed questions that were to be resolved regarding the is the likelihood that contamination is present on the proposal site during construction works and future operation of the proposal site, and if contamination is present, the level of potential risk does it pose to the proposal site construction workers or future FOGO facility operation workers.

Findings in relation to investigation and assessment DOQs (step 2) are provided in Table 7 below.

Table 7.2 DQO conclusions

Detailed Quality Objectives The questions to be answered for the Proposal site	Finding of TSI
What are potential sources of contamination within the proposed FOGO site?	TSI makes reference to findings of PSI and lists of potential source of contamination both onsite and offsite (section 2.4)
Do the results of the sampling and analysis indicate potential risk to human health?	No exceedance of adopted human health screen criteria in analysed soil samples and stockpile stockpiles
If contamination is present, will the presence of any contamination affect the future use of the site or pose a risk to the identified human receptors?	It is considered a low likelihood that onsite soil to pose an unacceptable health risk to construction workers and future operation works of the proposal site
Is there a need for further assessment, remediation and/or management?	PSI identified onsite and offsite of contamination sources. The completed TSI was focused on onsite sources of contamination and limited to soil to support planning approval and concept design of the proposal. Historical land use of site included waste storage. Surrounding land use including landfill may have the potential to introduce groundwater contamination and localised ground gas. Ongoing investigations during the design stages are warranted to assess the potential for offsite contamination.

Based on responses to DQO questions, it is unlikely that that soil contamination is present on the proposal site that will pose an unacceptable risk to construction or future operation works of the proposal site.

7.4 Recommendations

Considering the historical land use of the site and surrounding land use including active landfill, and limited scope work of this TSI, we recommend:

- That continued contamination investigation, assessment, and soil waste classification occur during the design and construction phases of the project, consistent with standard industry design practice.
- Noting the adjacent landfill site, any additional contamination investigation should consider media of soil, groundwater, and potential ground gas.

8. References

Abell, R. .. (1992). *Canberra (1:100 000 scale geological map).* Canberra: Bureau of Mineral Resources.

ACT EPA. (2019). *Information sheet 4 - Requirements for the resue and disposal of contaminated soil in the ACT.* Canberra.

ACT EPA. (2020). *Information sheet 11 - EPA Report Submission Requirements.* Canberra.

ACT EPA. (2021). *Environmental Standards: Assessment and Classification of Liquid and Non-Liquid Wastes.* Canberra.

ACT Government. (2011). *ACT Waste Management Strategy: Towards a sustainable Canberra 2011-2025.* Canberra: Environment and Sustainable Development Directorate.

ACT Government. (2019). *ACT Climate Change Strategy.* Retrieved from https://www.climatechoices.act.gov.au/policy-programs/act-climate-change-strategy

ACT Government. (2022, May 4). *Flood information for Jerrabomberra creek*. Retrieved from Department of Environment: https://www.environment.act.gov.au/__data/assets/pdf_file/0006/1286907/ACT-Flood-Maps-Jerrabomberra-Creek-ACCESS.pdf

ACT Government. (2022, March). FOGO faclity given the go-go. *Media Release*. Chris Steele MLA.

ACT NoWaste. (2018). *Waste Feasibility Study Roadmap and Recommendations: Discussion Paper.* ACT NoWaste.

CSIRO. (2011). *Soil Resource Information System (ASRIS).*

DEE. (2019). *National Waste Policy Action Plan 2019.*

GHD. (2022a). *Hume Food Organics and Garden Organics Facility Preliminary Site Investigation (PSI).* Canberra.

GHD. (2022b). *Sampling analysis and quality plan.* Canberra: GHD.

HEPA . (2020). *PFAS National Environmental Management Plan (NEMP), Version 2.0.* National Chemicals Working Group of the Heads of EPAs Australia and New Zealand.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure (NEPM) 2013 (No. 1).*

NSW EPA. (2022). *Contaminated Sites: Sampling Design Guidelines.*

Standards Australia. (2005). *AS4482.1 - Guide To Investigation and Sampling of Sites with Potentially Contaminated Soil (Part 1 Non-volatile and semi-volatile compounds; and Part 2 Volatile Substances).*

Appendices

Appendix A

Figures

Legend

- Site boundary
- Cadastre
- Watercourses

Paper Size ISO A4

0 25 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

GHD

Transport Canberra and City Services Directorate
Hume Food Organics and Garden Organics Facility
Targeted site investigation

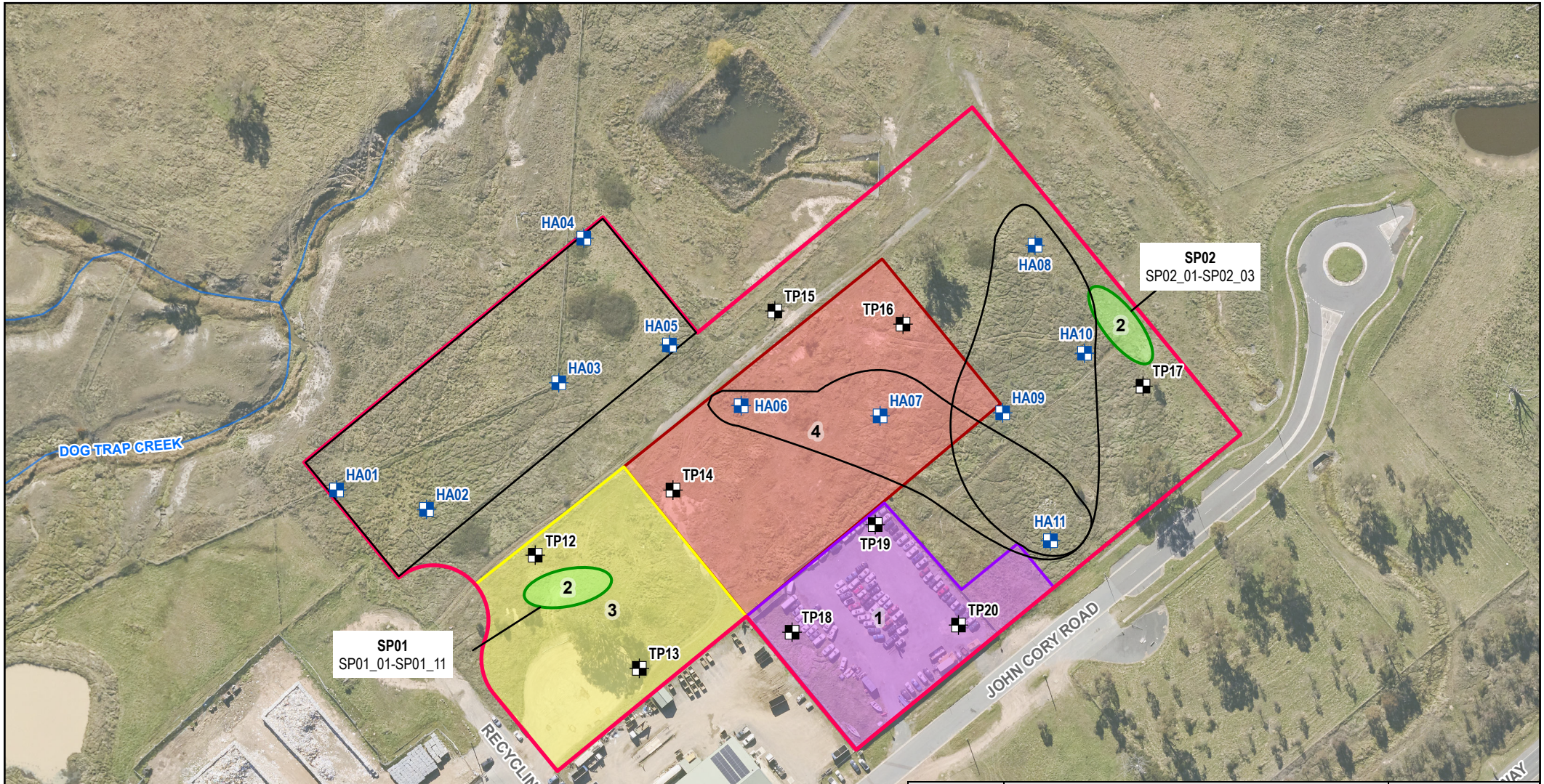
Project No. **12540460**
Revision No. **0**
Date **10/01/2023**

Proposal site location

FIGURE 1

\\ghdnet\ghd\AU\Canberra\Projects\23\12540460\GIS\Maps\Deliverables\SAQP_0.aprx
Print date: 10 Jan 2023 - 14:16

Light Grey Base, Light Grey Reference - Vicmap, Esri, HERE, Garmin, FAO, NOAA, USGS, 2022; Imagery - Metromap Tile Service extracted 26/04/2022; Roads, Cadastre - ACTmapi, 2022. Created by: pfernandes



APEC ID	APEC details	Risk Ranking
1	Vehicle storage area / historic waste storage area	High
2	Uncontrolled fill stockpiling	Moderate
3	Uncontrolled fill	Low
4	Historic waste recovery facilities storage activities	High

Legend

- Site boundary
- Cadastre
- Watercourses
- Heritage investigation footprint
- FOGO construction footprint sampling location
- Heritage investigation sampling location

APEC

- 1
- 2
- 3
- 4

Paper Size ISO A4

0 25 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

GHD

Transport Canberra and City Services Directorate
Hume Food Organics and Garden Organics Facility
Targeted Site Investigation

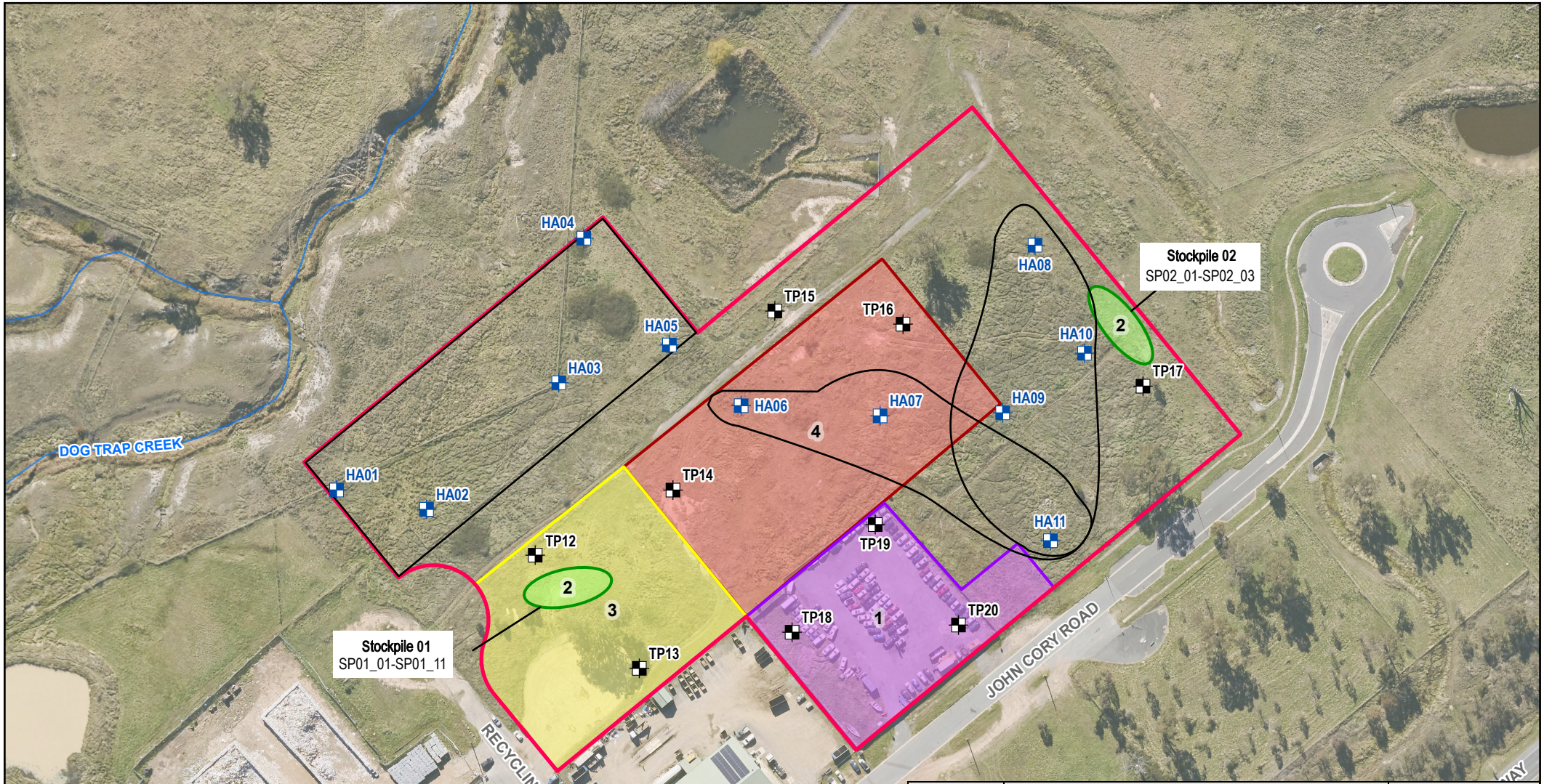
Project No. **12540460**
Revision No. **0**
Date **20/06/2023**

Sampling location plan

FIGURE 2

\\ghdnet\ghd\AU\Canberra\Projects\23\12540460\GIS\Maps\Deliverables\SAQP_0.aprx
Print date: 10 Jul 2023 - 11:55

Light Grey Base, Light Grey Reference - Vicmap, Esri, HERE, Garmin, FAO, NOAA, USGS, 2022; Imagery - Metromap Tile Service extracted 10/07/2023; Roads, Cadastre - ACTmapi, 2022; Heritage investigation area and transects - NOHC, 2022.
Created by: pfernandes



APEC ID	APEC details	Risk Ranking
1	Vehicle storage area / historic waste storage area	High
2	Uncontrolled fill stockpiling	Moderate
3	Uncontrolled fill	Low
4	Historic waste recovery facilities storage activities	High

Legend

- Site boundary
- Cadastre
- Watercourses
- Heritage investigation footprint
- FOGO construction footprint sampling location
- Heritage investigation sampling location

APEC

- 1
- 2
- 3
- 4

Paper Size ISO A4

0 25 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

GHD

Transport Canberra and City Services Directorate
Hume Food Organics and Garden Organics Facility
Targeted Site Investigation

Project No. **12540460**
Revision No. **0**
Date **20/06/2023**

Sampling location plan

FIGURE 2

\\ghdnet\ghd\AU\Canberra\Projects\23\12540460\GIS\Maps\Deliverables\SAQP_0.aprx
Print date: 10 Jul 2023 - 11:55

Light Grey Base, Light Grey Reference - Vicmap, Esri, HERE, Garmin, FAO, NOAA, USGS, 2022; Imagery - Metromap Tile Service extracted 10/07/2023; Roads, Cadastre - ACTmapi, 2022; Heritage investigation area and transects - NOHC, 2022.
Created by: pfernandes

Appendix B

Field equipment calibration sheet

PID Calibration Certificate

Instrument **PhoCheck Tiger**
Serial No. **T-119104**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	**Low**	**High**	**TWA**	**STEL**
	Settings	✓	50ppm	100ppm	10ppm	25ppm
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		97ppm Isobutylene	NATA	SY532		97.2 ppm Isobutylene

Calibrated by: **Amanda Neale**

Calibration date: **5-Apr-23**

Next calibration due: **5-May-23**

Appendix C

Test pit and borehole logs

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695418.395684
Northing 6081037.472488
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		1.4	TP12 0.0-0.1			Silty clayey SAND, dark brown, fine grain, fine grain clay, low plasticity [ALLUVIAL]	SM		no odour no staining	
0.1										-0.1
0.2										-0.2
0.3		1.6				Silty SAND, pale brown, medium grain, low plasticity silt [ALLUVIAL]	SM		no odour no staining	-0.3
0.4										-0.4
0.5										-0.5
0.6		1.6	TP12 0.6-0.7			Clayey SAND, pale brown mottled orange, fine to medium grain, fine grain clay low plasticity [RESIDUAL]	SM		no odour no staining	-0.6
0.7		1.7				Clayey SAND, pale brown mottled orange, fine-medium grained, fine grain clay, low plasticity [RESIDUAL]	SM		no odour no staining	-0.7
0.8		1.7				Clayey SAND, pale brown mottled orange, fine-medium grained, fine grain clay, low plasticity [RESIDUAL]	SM		no odour no staining	-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2		1.4				Sandy CLAY, grey-brown, fine grain medium plasticity, fine to medium grian sand [RESIDUAL]	D		Sand content inceases with depth	-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

SOIL BORE TP13

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.45
Diameter (mm)

Easting 695456.287266
Northing 6080996.284037
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		0.9	TP13 0.0-0.1			Clayey SAND, brown, fine to medium grain, fine grain clay, low plasticity [ALLUVIAL]	SM		no odour no staining	
0.1										-0.1
0.2										-0.2
0.3		0.9				Clayey sandy SILT, brown, low plasticity, fine sand [ALLUVIAL]	SM		no odour no staining	-0.3
0.4		0.9	TP13 0.4-0.5			Sandy gravelly CLAY, brown-orange, fine grain, low plasticity, fine-coarse grained sand, fine to coarse grain gravel, sub angular, poorly graded [RESIDUAL]	SM			-0.4
0.5										-0.5
0.6		0.8				Sandy gravelly CLAY, brown-orange, fine grain, low plasticity, fine-coarse grained sand, fine to coarse grain gravel, sub angular, poorly graded [RESIDUAL]	SM		no odour no staining, Weathered rock	-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4		0.9				Clayey SAND, pale brown, fine to medium grain, fine grain clay, low plasticity [RESIDUAL]	SM		no odour no staining, Organic material in compacted parts	-1.4
1.5						Termination Depth at: 1.45 m. Refusal on compacted soil.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.20
Diameter (mm)

Easting 695468.533764
Northing 6081061.163437
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.05		1.3	TP14 0.0-0.1			Clayey SAND, dark brown, fine to medium grain, fine grain clay, low to medium plasticity [ALLUVIAL]	SM		no odour no staining	-0.05
0.1		1.3				Clayey silty SAND, brown, fine to medium grain, low plasticity clay, low plasticity silt [ALLUVIAL]	SM		no odour no staining, Waste wood	-0.1
0.15										-0.15
0.2										-0.2
0.25										-0.25
0.3		1.3	TP14 0.3-0.4			Sandy CLAY, brown mottled orange-black, fine grain, low plasticity, medium to coarse grain sand [RESIDUAL]	SM		no odour no staining	-0.3
0.35										-0.35
0.4										-0.4
0.45										-0.45
0.5		1.3				Sandy CLAY, brown mottled orange-black, fine grain, low plasticity, medium to coarse grain sand [RESIDUAL]	SM		no odour no staining, higher sand content than previous	-0.5
0.55										-0.55
0.6										-0.6
0.65										-0.65
0.7										-0.7
0.75										-0.75
0.8										-0.8
0.85										-0.85
0.9		1.3				Clayey SAND, pale brown mottled orange, medium to coarse grain, fine grain clay, low plasticity [RESIDUAL]	SM		no odour no staining	-0.9
0.95										-0.95
1										-1
1.05										-1.05
1.1		1.3				Clayey SAND, pale brown w/ orange mottle, medium-coarse grained, fine grain clay, low plasticity [RESIDUAL]	SM			-1.1
1.15										-1.15
1.2						Termination Depth at: 1.20 m. Refusal on compacted soil.				-1.2
1.25										-1.25

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695505.596646
Northing 6081126.330025
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		1.2	TP15 0.0-0.1			Sandy CLAY, dark brown, fine grain, low plasticity, fine to medium grain sand [RESIDUAL]	SM		no odour no staining	
0.1		1.2				Clayey SAND, brown, fine to medium grain, low plasticity clay [ALLUVIAL]	SM		no odour no staining	-0.1
0.2										-0.2
0.3		1.2	TP15 0.3-0.4			Silty SAND, creamy brown, fine grain, no plasticity silt [ALLUVIAL]	SM		no odour no staining, Dense	-0.3
0.4										-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4		1.2				Clayey SAND, pale brown, fine to medium grain, low plasticity clay [RESIDUAL]	SM		no odour no staining, Hard	-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695552.256238
Northing 6081121.558998
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		1	TP16 0.0-0.1			Sandy CLAY, dark brown, fine grain, low plasticity, fine to medium grain sand [RESIDUAL]	SM		no odour no staining	
0.1										-0.1
0.2		1.1				Clayey SAND, brown, fine to medium grain, low plasticity clay [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4		1	TP16 0.4-0.5			Clayey SAND, pale brown, fine to medium grain, no plasticity clay [RESIDUAL]	SM		no odour no staining	-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2		1				Gravelly SAND, pale brown mottle orange, fine to coarse grain, poorly graded, fine grain gravel [RESIDUAL]	SM		no odour no staining	-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695639.612888
Northing 6081098.99467
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
			TP17 0.0-0.1			Sandy CLAY, dark brown, fine grain, low plasticity, fine to medium grain sand [RESIDUAL]	SM		no odour no staining	
0.1										-0.1
0.2										-0.2
0.3			TP17 0.3-0.4			Sandy CLAY, black-brown, fine grain, low plasticity, fine to medium grain sand [RESIDUAL]	SM		no odour no staining	-0.3
0.4						Silty SAND, pale creamy brown, fine to medium grain, no plasticity silt [RESIDUAL]	SM		no odour no staining	-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695511.885138
Northing 6081009.429845
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
			TP18 0.0-0.1			Clayey SAND, brown, fine to medium grain, low plasticity clay [FILL NATURAL]	SM		no odour no staining	
0.1										-0.1
0.2										-0.2
0.3			TP18 0.3-0.4							-0.3
0.4										-0.4
0.5						Clayey SAND, brown, fine to medium grain, medium plasticity clay [ALLUVIAL]	SM		no odour no staining	-0.5
0.6										-0.6
0.7						CLAY, grey-brown, fine grain, high plasticity [RESIDUAL]	SM		no odour no staining	-0.7
0.8										-0.8
0.9						Clayey SAND, grey-brown, fine to medium grain, medium plasticity clay [RESIDUAL]	SM		no odour no staining	-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695542.143273
Northing 6081048.598435
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		1	TP19 0.0-0.1			Gravelly SAND, dark brown, fine to coarse grain, poorly graded, coarse grained gravel, sunangular, poorly graded [FILL NATURAL]	SM		no odour no staining, Fill material, logs gravel, glass	-0.1
0.2										-0.2
0.3		1	TP19 0.3-0.4			Gravelly clayey SAND, grey, fine to coarse grain, coarse grain gravel, subangular, poorly graded, low plasticity clay [FILL NATURAL]	SM		no odour no staining	-0.3
0.4										-0.4
0.5		1				Silty SAND, grey, fine to medium grain, no plasticity silt	SM		no odour no staining	-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9		1				Clayey SAND, grey with mottle orange, fine to medium grain, low plasticity clay [RESIDUAL]	SM		no odour no staining	-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4		1				Clayey SAND, grey with mottle orange, fine to medium grain, low plasticity clay [RESIDUAL]	SM		no odour no staining	-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 17/04/2023 - 17/04/2023

Drill Co. CordCivil
Driller TD
Rig Type Excavator
Total Depth (m) 1.50
Diameter (mm)

Easting 695572.44702
Northing 6081012.040593
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RW

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		1.3	TP20 0.0-0.1			Sandy GRAVEL, black, fine to coarse grain, subangular, well graded, fine to coarse grain sand [FILL NATURAL]	SM		no odour no staining, large pieces of asphalt	
0.1										-0.1
0.2										-0.2
0.3		1.2				Sandy clayey GRAVEL, grey, fine to coarse grain, subangular, well graded, low plasticity clay, fine to medium grain sand [FILL NATURAL]	SM		strong organic, rotting odour odour no staining, Large chunks of gravel/waste	-0.3
0.4		1.2	TP20 0.4-0.5			CLAY, black-brown, fine grain, high plasticity [RESIDUAL]	SM		strong organic, rotting odour odour no staining	-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8		1.1				Sandy CLAY, grey, fine grain, medium plasticity, fine to medium grain sand [RESIDUAL]	SM		strong organic, rotting odour odour no staining	-0.8
0.9										-0.9
1		1.1				Clayey SAND, grey, fine to coarse grain, fine grain clay, low plasticity [RESIDUAL]	SM		strong organic, rotting odour odour no staining	-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.00
Diameter (mm) 100

Easting 695346.168681
Northing 6081061.193601
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		0.2	HA01_0.0-0.3			Clayey SAND, brown, fine-medium grain, sub-angular, poorly graded, fine grain clay, no plasticity [ALLUVIAL]	SM		no odour no staining	
0.1										-0.1
0.2										-0.2
0.3		0.2	HA01_0.3-0.5			Sandy CLAY, brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.3
0.4										-0.4
0.5		0.2				Clayey SAND, tan-brown, fine-medium grain, sub-angular, poorly graded, fine grain clay, no plasticity [RESIDUAL]	SM		no odour no staining	-0.5
0.6										-0.6
0.7		0.2				Sandy CLAY, brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.7
0.8										-0.8
0.9										-0.9
1						Termination Depth at: 1.00 m. Refusal on compacted soil.				-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.10
Diameter (mm) 100

Easting 695378.91339
Northing 6081054.147367
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.2	HA02_0.0-0.3			Sandy CLAY, dark brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.1
0.2										-0.2
0.3		0.2				Sandy CLAY trace gravel, tan-brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.3
0.4			HA02_0.4-0.6							-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8		0.2		∇		Sandy CLAY, tan-brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.8
0.9										-0.9
1										-1
1.1						Termination Depth at: 1.10 m. Refusal on compacted soil.				-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 0.70
Diameter (mm) 100

Easting 695427.044102
Northing 6081100.228528
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		0.2				Organic surface layer [TOPSOIL]	SM		no odour no staining	
		0.2	HA03_0.05-0.2			Clayey SAND trace gravel, pale tan, fine to coarse grain, subangular, poorly graded, fine grain clay, no plasticity [ALLUVIAL]	SM		no odour no staining	
0.1										-0.1
0.2			HA03_0.2-0.4							-0.2
0.3										-0.3
0.4										-0.4
0.5										-0.5
0.6										-0.6
0.7						Termination Depth at: 0.70 m. Refusal on compacted soil.				-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.30
Diameter (mm) 100

Easting 695436.15026
Northing 6081152.860602
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		0.2	HA04_0.0-0.3			Sandy CLAY, dark brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	
0.1										-0.1
0.2										-0.2
0.3		0.2	HA04_0.3-0.6			Clayey SAND trace gravel, pale tan, fine to coarse grain, subangular, poorly graded, fine grain clay, no plasticity [RESIDUAL]	SM		no odour no staining	-0.3
0.4										-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3						Termination Depth at: 1.30 m. Refusal on compacted soil.				-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.10
Diameter (mm) 100

Easting 695467.321176
Northing 6081113.97724
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.2	HA05_0.0-0.2			Sandy CLAY, dark brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.1
0.2		0.2				Clayey SAND trace gravel, pale tan, fine to coarse grain, subangular, poorly graded, fine grain clay, no plasticity [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4										-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1						Termination Depth at: 1.10 m. Refusal on compacted soil.				-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.10
Diameter (mm) 100

Easting 695493.420959
Northing 6081091.875294
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.2				Sandy CLAY, pale brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.1
0.2		0.2	HA06_0.2-0.4			Sandy CLAY trace gravel, dark brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4		0.2	HA06_0.4-0.6			Sandy CLAY trace gravel, pale brown mottled orange-black, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.4
0.5										-0.5
0.6		0.2				Sandy CLAY trace gravel, pale tan-brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1						Termination Depth at: 1.10 m. Refusal on compacted soil.				-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 0.90
Diameter (mm) 100

Easting 695543.989619
Northing 6081088.16869
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.8	HA07_0.0-0.2			Sandy CLAY, dark brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.1
0.2		0.8	HA07_0.2-0.4			Sandy CLAY, brown mottled orange, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4		0.8				Clayey SAND, orange mottled grey, fine-medium grain, sub-angular, poorly graded, fine grain clay, low plasticity [RESIDUAL]	SM		no odour no staining	-0.4
0.5										-0.5
0.6										-0.6
0.7		0.8				Clayey SAND, grey mottled orange, fine-medium grain, sub-angular, poorly graded, fine grain clay, low plasticity [RESIDUAL]	SM		no odour no staining	-0.7
0.8										-0.8
0.9						Termination Depth at: 0.90 m. Refusal on compacted soil.				-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 0.60
Diameter (mm) 100

Easting 695600.382941
Northing 6081150.287391
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.8				Silty CLAY, pale tan-brown, fine grain, medium plasticity, fine grain sand [RESIDUAL]	SM		no odour no staining	-0.1
0.2		0.8	HA08_0.2-0.4			Sandy CLAY, pale tan, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4		0.8	HA08_0.4-0.6			Sandy CLAY, pale tan, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.4
0.5										-0.5
0.6						Termination Depth at: 0.60 m. Refusal on rock.				-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.50
Diameter (mm) 100

Easting 695588.592964
Northing 6081089.269088
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.8	HA09_0.0-0.2			Sandy CLAY, brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.1
0.2		0.8	HA09_0.2-0.4			Sandy CLAY, brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4										-0.4
0.5										-0.5
0.6										-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1										-1
1.1		0.8				Sandy GRAVEL, brown, medium to coarse grain, subangular to angular, well graded, fine to meduim grain sand, subangular, poorly graded [RESIDUAL]	SM		no odour no staining	-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4
1.5						Termination Depth at: 1.50 m. Target depth achieved.				-1.5

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.00
Diameter (mm) 100

Easting 695618.37817
Northing 6081110.987467
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
		0.8				Sandy CLAY, brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	
		0.8				Sandy CLAY, pale brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	
0.1										-0.1
0.2		0.8	HA10_0.2-0.4			CLAY, tan mottled orange, fine grain, high plasticity [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4										-0.4
0.5										-0.5
0.6		0.8	HA10_0.6-0.8			Sandy CLAY, tan mottled orange, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1						Termination Depth at: 1.00 m. Refusal on compacted soil.				-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

BOREHOLE LOG

ENVIRONMENTAL-SOIL BORE

Client Transport Canberra and City Services
Project Hume FOGO and MRF Project Delivery
Project No. 12540460
Site ACT Food Organics & Garden Organics Facility
Location Recycling Road
Date Drilled 02/06/2023 - 02/06/2023

Drill Co. NA
Driller RS/AK
Rig Type Hand auger
Total Depth (m) 1.00
Diameter (mm) 100

Easting 695605.967668
Northing 6081042.729704
Grid Ref GDA94_MGA_zone_55
Elevation
Logged By RS
Checked By RS

Depth (m)	Drilling Method	PID (ppm)	Sample ID	Water	Graphic Log	LITHOLOGICAL DESCRIPTION Soil Type (Classification Group Symbol); Particle Size; Colour; Secondary / Minor Components.	Moisture	Consistency	COMMENTS/ CONTAMINANT INDICATORS Odours, staining, waste materials,separate phase liquids, imported fill, ash.	Elevation (m)
0.1		0.8	HA11_0.0-0.2			Sandy CLAY, pale brown, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.1
0.2		0.8				Sandy CLAY, dark brown, fine grain, medium plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.2
0.3										-0.3
0.4			HA11_0.4-0.6							-0.4
0.5										-0.5
0.6		0.8				Sandy CLAY, tan, fine grain, low plasticity, fine-medium grain sand, sub-angular, poorly graded [RESIDUAL]	SM		no odour no staining	-0.6
0.7										-0.7
0.8										-0.8
0.9										-0.9
1						Termination Depth at: 1.00 m. Refusal on compacted soil.				-1
1.1										-1.1
1.2										-1.2
1.3										-1.3
1.4										-1.4

Notes

This log is not intended for geotechnical purposes.

Drilling Abbreviations	Moisture Abbreviations	Consistency Abbreviations	
AH-Air Hammer, AR-Air Rotary, BE-Bucket Excavation, CC-Concrete Coring, DC-Diamond Core, FH-Foam Hammer, HA-Hand Auger, HE-Hand Excavation (shovel), HFA-Hollow Flight Auger, MR-Mud Rotary, NDD-Non Destructive Drilling, PT-Pushtube, SD-Sonic Drilling, SFA-Solid Flight Auger, SS-Split Spoon, WB-Wash Bore, WS-Window Sampler	D-Dry, SM-Slightly Moist, M-Moist, VM-Very Moist, W-Wet, S-Saturated	**Granular Soils** VL-Very Loose, L-Loose, MD-Medium Dense, D-Dense,VD - Very Dense	**Cohesive Soils** VS-Very Soft, S-Soft, F-Firm, ST-Stiff, VST-Very Stiff, H-Hard

Appendix D

Analytical results

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

				Inorganics	Asbestos																Metals								BTEXN								TRH - NEPM 2013						
				Moisture (%)	Asbestos from ACM in Soil	ACM - Comment	Asbestos from FA & AF in Soil	AF - Comment	FA- Comment	Approximate Sample Mass	ACM Mass	Mass AF	Mass Asbestos in ACM	Friable Asbestos (FA & AF) - Mass	Mass Asbestos in FA	Mass asbestos in AF	Mass FA	Organic Fibres - Comment	Respirable Fibres - Comment	Asbestos Reported Result	Synthetic Fibres - Comment	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)
				%	%	-	%	-	-	g	g	g	g	g	g	g	g	-	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				1																	2	0.4	5	5	5	0.1	5	5	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5	20	20	50	50	100	100	100
NEPM 2013 Table 1A(1) HIL D Comm/Ind																					3000[#1]	900	3600[#2]	240000	1500[#3]	730[#4]	6000	400000																
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																											
0-1m																													4	NL[#8]	NL[#8]			NL[#8]		NL[#8]	310[#9]		NL[#8]				
1-2m																													6	NL[#8]	NL[#8]			NL[#8]		NL[#8]	480[#9]		NL[#8]				
2-4m																													9	NL[#8]	NL[#8]			NL[#8]		NL[#8]	NL[#8]		NL[#8]				
>4m																													20	NL[#8]	NL[#8]			NL[#8]		NL[#8]	NL[#8]		NL[#8]				
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil					0.05		0.001[#10]																																				
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																											
Location Code	**Sample Date**	**Field ID**	**Depth**																																								
HA01	05-Jun-23	HA01_0.0-0.3	0-0.3	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	<0.4	9.6	<5	14	<0.1	<5	23	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA01_0.3-0.5	0.3-0.5	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6	<0.4	7.5	<5	11	<0.1	<5	6.5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA02	05-Jun-23	HA02_0.0-0.3	0-0.3	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	<0.4	9.6	<5	17	<0.1	<5	16	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA02_0.4-0.6	0.4-0.6	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	<0.4	8.9	<5	9.5	<0.1	<5	6.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		QC105	0.4-0.6	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	<0.4	14	5.8	21	<0.1	<5	11	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA03	05-Jun-23	HA03_0.05-0.2	0.05-0.2	10	0	1[#4]	0	1[#4]	1[#4]	155	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	4.9	<0.4	6.7	<5	11	<0.1	<5	9.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA03_0.2-0.4	0.2-0.4	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1	<0.4	8.4	<5	11	<0.1	<5	6.3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA04	05-Jun-23	HA04_0.0-0.3	0-0.3	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	<0.4	8.6	<5	11	<0.1	<5	6.5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA04_0.3-0.6	0.3-0.6	6	0	1[#4]	0	1[#4]	1[#4]	185	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	3.7	<0.4	7.1	<5	7	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		QC106	0.3-0.6	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.7	<0.4	<5	<5	6.5	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
	05-Jun-23	QC206	0.3-0.4	4.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<5	<1	5	<5	9	<0.1	2	7	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<10	<10	<50	<50	<100	<100	<50
HA05	05-Jun-23	HA05_0.0-0.2	0-0.2	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5	<0.4	7.4	<5	22	<0.1	<5	12	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA06	05-Jun-23	HA06_0.2-0.4	0.2-0.4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	<0.4	9.4	<5	13	<0.1	<5	8.6	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA06_0.4-0.6	0.4-0.6	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	<0.4	15	8.7	17	<0.1	8.4	15	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA07	05-Jun-23	HA07_0.0-0.2	0-0.2	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	<0.4	<5	<5	12	<0.1	<5	7.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA07_0.2-0.4	0.2-0.4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.8	<0.4	9.9	<5	11	<0.1	<5	10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA08	02-Jun-23	HA08_0.2-0.4	0.2-0.4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.5	<0.4	9.1	<5	16	<0.1	<5	9.3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA08_0.4-0.6	0.4-0.6	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.8	<0.4	10	<5	18	<0.1	<5	12	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA09	02-Jun-23	HA09_0.0-0.2	0-0.2	5.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.3	<0.4	6.4	<5	12	<0.1	<5	7.2	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA09_0.2-0.4	0.2-0.4	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6	<0.4	5.1	<5	8.9	<0.1	<5	5.3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA10	02-Jun-23	HA10_0.2-0.4	0.2-0.4	8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.1	<0.4	9.9	<5	10	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA10_0.6-0.8	0.6-0.8	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.9	<0.4	18	6.3	18	<0.1	7.8	11	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
HA11	02-Jun-23	HA11_0.0-0.2	0-0.2	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	<0.4	5.2	<5	13	<0.1	<5	7.7	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		HA11_0.4-0.6	0.4-0.6	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	<0.4	9	<5	16	<0.1	<5	8.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP12	17-Apr-23	TP12 0.0-0.1	0-0.1	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.4	<0.4	12	5.3	20	<0.1	<5	16	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP12 0.6-0.7	0.6-0.7	8.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	<0.4	9.5	<5	11	<0.1	<5	10	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP13	17-Apr-23	TP13 0.0-0.1	0-0.1	13	0	1[#4]	0	1[#4]	1[#4]	280	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	6.1	<0.4	8.3	<5	13	<0.1	<5	16	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP13 0.4-0.5	0.4-0.5	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	<0.4	18	9.2	12	<0.1	6.4	21	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP14	17-Apr-23	TP14 0.0-0.1	0-0.1	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	<0.4	8.9	<5	14	<0.1	<5	8.7	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP14 0.3-0.4	0.3-0.4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.9	<0.4	13	<5	13	<0.1	<5	13	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP15	17-Apr-23	TP15 0.0-0.1	0-0.1	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	<0.4	10	<5	11	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP15 0.3-0.4	0.3-0.4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	<0.4	<5	<5	5.4	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP16	17-Apr-23	TP16 0.0-0.1	0-0.1	19	0	1[#4]	0	1[#4]	1[#4]	132	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	4.8	<0.4	7.2	<5	13	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP16 0.4-0.5	0.4-0.5	9.4	0	1[#4]	0	1[#4]	1[#4]	275	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	9.5	<0.4	8.3	<5	13	<0.1	<5	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP17	17-Apr-23	QC101		14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	<0.4	7.5	<5	17	<0.1	<5	13	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP17 0.0-0.1	0-0.1	14	0	1[#4]	0	1[#4]	1[#4]	258	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	4.2	<0.4	8.1	<5	21	<0.1	<5	8.7	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP17 0.3-0.4	0.3-0.4	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.1	<0.4	6	<5	16	<0.1	<5	8.4	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP18	17-Apr-23	TP18 0.0-0.1	0-0.1	13	0	1[#4]	0	1[#4]	1[#4]	199	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	5.4	<0.4	12	6.3	25	<0.1	<5	40	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP18 0.3-0.4	0.3-0.4	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9.1	<0.4	15	11	41	<0.1	5.5	20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	230	230	1000	320	1550
TP19	17-Apr-23	TP19 0.0-0.1	0-0.1	3.9	0	1[#4]	0	1[#4]	1[#4]	225	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	2.8	1.1	15	13	56	<0.1	6.7	200	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<100	<100	260	440	700
		TP19 0.3-0.4	0.3-0.4	9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.1	<0.4	17	7.9	24	<0.1	6.5	38	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
TP20	17-Apr-23	QC102		27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.8	<0.4	13	30	120	<0.1	<5	190	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	<100	<100
		TP20 0.0-0.1	0-0.1	3	0	1[#4]	0	1[#4]	1[#4]	185	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	2.9	<0.4	10	8.1	18	<0.1	<5	29	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<100	<100	470	700	1170
		TP20 0.4-0.5	0.4-0.5	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3	<0.4	13	6.7	17	<0.1	<5	14	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	-	<0.5	<20	<20	<50	<50	<100	180	180

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

				TRH - NEPM 1999					PAHs - standard 16																			OC Pesticides											
				C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				20	20	50	50	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HIL D Comm/Ind																								4000[#5]	40[#6]	40[#6]	40[#6]						45		530				
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																							
0-1m																																							
1-2m																																							
2-4m																																							
>4m																																							
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																							
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																							
Location Code	**Sample Date**	**Field ID**	**Depth**																																				
HA01	05-Jun-23	HA01_0.0-0.3	0-0.3	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		HA01_0.3-0.5	0.3-0.5	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
HA02	05-Jun-23	HA02_0.0-0.3	0-0.3	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
		HA02_0.4-0.6	0.4-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		QC105	0.4-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
HA03	05-Jun-23	HA03_0.05-0.2	0.05-0.2	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
		HA03_0.2-0.4	0.2-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
HA04	05-Jun-23	HA04_0.0-0.3	0-0.3	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
		HA04_0.3-0.6	0.3-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		QC106	0.3-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
	05-Jun-23	QC206	0.3-0.4	<10	<50	<100	<100	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HA05	05-Jun-23	HA05_0.0-0.2	0-0.2	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
HA06	05-Jun-23	HA06_0.2-0.4	0.2-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		HA06_0.4-0.6	0.4-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
HA07	05-Jun-23	HA07_0.0-0.2	0-0.2	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		HA07_0.2-0.4	0.2-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
HA08	02-Jun-23	HA08_0.2-0.4	0.2-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		HA08_0.4-0.6	0.4-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
HA09	02-Jun-23	HA09_0.0-0.2	0-0.2	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		HA09_0.2-0.4	0.2-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
HA10	02-Jun-23	HA10_0.2-0.4	0.2-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
		HA10_0.6-0.8	0.6-0.8	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
HA11	02-Jun-23	HA11_0.0-0.2	0-0.2	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
		HA11_0.4-0.6	0.4-0.6	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP12	17-Apr-23	TP12 0.0-0.1	0-0.1	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		TP12 0.6-0.7	0.6-0.7	<20	54	<50	61	115	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP13	17-Apr-23	TP13 0.0-0.1	0-0.1	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		TP13 0.4-0.5	0.4-0.5	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP14	17-Apr-23	TP14 0.0-0.1	0-0.1	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
		TP14 0.3-0.4	0.3-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
TP15	17-Apr-23	TP15 0.0-0.1	0-0.1	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		TP15 0.3-0.4	0.3-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP16	17-Apr-23	TP16 0.0-0.1	0-0.1	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		TP16 0.4-0.5	0.4-0.5	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP17	17-Apr-23	QC101		<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5
		TP17 0.0-0.1	0-0.1	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5
		TP17 0.3-0.4	0.3-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
TP18	17-Apr-23	TP18 0.0-0.1	0-0.1	<20	<20	<50	67	67	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5
		TP18 0.3-0.4	0.3-0.4	<20	140	700	440	1280	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP19	17-Apr-23	TP19 0.0-0.1	0-0.1	<20	<40	<100	250	250	<0.5	<0.5	<0.5	0.5	0.6	0.6	0.7	2.2	0.9	<0.5	0.8	<0.5	0.8	<0.5	1.8	8.9	0.9	1.1	1.4	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5
		TP19 0.3-0.4	0.3-0.4	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	-	-	-	-	-	-	-	-	-	-	-	-
TP20	17-Apr-23	QC102		<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05
		TP20 0.0-0.1	0-0.1	<20	<40	260	400	660	<0.5	<0.5	<0.5	0.7	1.3	1.2	1.1	3.6	1.5	0.5	2	<0.5	1.6	0.8	2.6	17	2.3	2.3	2.3	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-	-	<0.5	<0.5
		TP20 0.4-0.5	0.4-0.5	<20	<20	<50	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	-	-	<0.05	<0.05

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

				OC Pesticides																OP Pesticides																				
				4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos
				mg/kg	mg/kg	mg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.05	0.05	0.05	50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	50	0.05	0.5	0.2	0.2	0.2	0.05	0.05	0.2	0.2	0.2	2	0.2	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.05
NEPM 2013 Table 1A(1) HIL D Comm/Ind					3600		2000000				100				50		80000	2500	160							2000														
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																								
0-1m																																								
1-2m																																								
2-4m																																								
>4m																																								
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																								
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																								
Location Code	**Sample Date**	**Field ID**	**Depth**																																					
HA01	05-Jun-23	HA01_0.0-0.3	0-0.3	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		HA01_0.3-0.5	0.3-0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
HA02	05-Jun-23	HA02_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA02_0.4-0.6	0.4-0.6	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		QC105	0.4-0.6	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
HA03	05-Jun-23	HA03_0.05-0.2	0.05-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA03_0.2-0.4	0.2-0.4	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
HA04	05-Jun-23	HA04_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA04_0.3-0.6	0.3-0.6	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		QC106	0.3-0.6	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
	05-Jun-23	QC206	0.3-0.4	<0.2	<0.05	<0.05	<50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.2	-	-	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05
HA05	05-Jun-23	HA05_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA06	05-Jun-23	HA06_0.2-0.4	0.2-0.4	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		HA06_0.4-0.6	0.4-0.6	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
HA07	05-Jun-23	HA07_0.0-0.2	0-0.2	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		HA07_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA08	02-Jun-23	HA08_0.2-0.4	0.2-0.4	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		HA08_0.4-0.6	0.4-0.6	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
HA09	02-Jun-23	HA09_0.0-0.2	0-0.2	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		HA09_0.2-0.4	0.2-0.4	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
HA10	02-Jun-23	HA10_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA10_0.6-0.8	0.6-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA11	02-Jun-23	HA11_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA11_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12	17-Apr-23	TP12 0.0-0.1	0-0.1	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		TP12 0.6-0.7	0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13	17-Apr-23	TP13 0.0-0.1	0-0.1	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		TP13 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	17-Apr-23	TP14 0.0-0.1	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		TP14 0.3-0.4	0.3-0.4	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
TP15	17-Apr-23	TP15 0.0-0.1	0-0.1	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		TP15 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16	17-Apr-23	TP16 0.0-0.1	0-0.1	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		TP16 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17	17-Apr-23	QC101		<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
		TP17 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
		TP17 0.3-0.4	0.3-0.4	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
TP18	17-Apr-23	TP18 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
		TP18 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP19	17-Apr-23	TP19 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
		TP19 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	<500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP20	17-Apr-23	QC102		<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
		TP20 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
		TP20 0.4-0.5	0.4-0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-

				OP Pesticides																				Chlorinated Hydrocarbons						PCBs							
				Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimphos-ethyl	Pirimiphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,4-dichlorobenzene	Benzal Chloride	Benzotrichloride	Hexachlorobutadiene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EQL				0.2	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.05	0.05	0.5	100	100	100	100	100	100	100	100
NEPM 2013 Table 1A(1) HIL D Comm/Ind																																					7000[#/]
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																					
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																					
Location Code	**Sample Date**	**Field ID**	**Depth**																																		
HA01	05-Jun-23	HA01_0.0-0.3	0-0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
		HA01_0.3-0.5	0.3-0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
HA02	05-Jun-23	HA02_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
		HA02_0.4-0.6	0.4-0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
		QC105	0.4-0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
HA03	05-Jun-23	HA03_0.05-0.2	0.05-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA03_0.2-0.4	0.2-0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
HA04	05-Jun-23	HA04_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA04_0.3-0.6	0.3-0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
		QC106	0.3-0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
	05-Jun-23	QC206	0.3-0.4	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.2	-	<0.05	-	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100
HA05	05-Jun-23	HA05_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA06	05-Jun-23	HA06_0.2-0.4	0.2-0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
		HA06_0.4-0.6	0.4-0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
HA07	05-Jun-23	HA07_0.0-0.2	0-0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
		HA07_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
HA08	02-Jun-23	HA08_0.2-0.4	0.2-0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
		HA08_0.4-0.6	0.4-0.6	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
HA09	02-Jun-23	HA09_0.0-0.2	0-0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
		HA09_0.2-0.4	0.2-0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	-	-	-	-	<100	<100	<100	<100	<100	<100	<100	<100
HA10	02-Jun-23	HA10_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA10_0.6-0.8	0.6-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA11	02-Jun-23	HA11_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA11_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12	17-Apr-23	TP12 0.0-0.1	0-0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
		TP12 0.6-0.7	0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
TP13	17-Apr-23	TP13 0.0-0.1	0-0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
		TP13 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
TP14	17-Apr-23	TP14 0.0-0.1	0-0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
		TP14 0.3-0.4	0.3-0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
TP15	17-Apr-23	TP15 0.0-0.1	0-0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
		TP15 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
TP16	17-Apr-23	TP16 0.0-0.1	0-0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
		TP16 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
TP17	17-Apr-23	QC101		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
		TP17 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
		TP17 0.3-0.4	0.3-0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
TP18	17-Apr-23	TP18 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
		TP18 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
TP19	17-Apr-23	TP19 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
		TP19 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	-	-	-	-	-	-	-	-
TP20	17-Apr-23	QC102		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
		TP20 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
		TP20 0.4-0.5	0.4-0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<2	<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

				SVOCs								VOCs		PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids										
				1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,3,5-Trichlorobenzene	Benzyl chloride	Hexachlorocyclopentadiene	Hexachloroethane	Pentachlorobenzene	1,2,3-trichlorobenzene	1,3-dichlorobenzene	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononane sulfonate (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
NEPM 2013 Table 1A(1) HIL D Comm/Ind																																
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																
0-1m																																
1-2m																																
2-4m																																
>4m																																
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																	20		20							50						
Location Code	**Sample Date**	**Field ID**	**Depth**																													
HA01	05-Jun-23	HA01_0.0-0.3	0-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA01_0.3-0.5	0.3-0.5	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA02	05-Jun-23	HA02_0.0-0.3	0-0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA02_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		QC105	0.4-0.6	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA03	05-Jun-23	HA03_0.05-0.2	0.05-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA03_0.2-0.4	0.2-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA04	05-Jun-23	HA04_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA04_0.3-0.6	0.3-0.6	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		QC106	0.3-0.6	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	05-Jun-23	QC206	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
HA05	05-Jun-23	HA05_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA06	05-Jun-23	HA06_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		HA06_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA07	05-Jun-23	HA07_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA07_0.2-0.4	0.2-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA08	02-Jun-23	HA08_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		HA08_0.4-0.6	0.4-0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA09	02-Jun-23	HA09_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		HA09_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA10	02-Jun-23	HA10_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA10_0.6-0.8	0.6-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA11	02-Jun-23	HA11_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA11_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12	17-Apr-23	TP12 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP12 0.6-0.7	0.6-0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13	17-Apr-23	TP13 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP13 0.4-0.5	0.4-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	17-Apr-23	TP14 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP14 0.3-0.4	0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15	17-Apr-23	TP15 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP15 0.3-0.4	0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16	17-Apr-23	TP16 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP16 0.4-0.5	0.4-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17	17-Apr-23	QC101		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		TP17 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP17 0.3-0.4	0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP18	17-Apr-23	TP18 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP18 0.3-0.4	0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP19	17-Apr-23	TP19 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP19 0.3-0.4	0.3-0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
TP20	17-Apr-23	QC102		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP20 0.0-0.1	0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		TP20 0.4-0.5	0.4-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

				PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums				
				Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	6:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	6:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	PFAS (Sum of Total)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	PFAS (Sum of Total)(WA DER List)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.005	0.005	0.005	0.01	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.05	0.005	0.01
NEPM 2013 Table 1A(1) HIL D Comm/Ind																			
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																			
0-1m																			
1-2m																			
2-4m																			
>4m																			
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																			
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)															20				
Location Code	**Sample Date**	**Field ID**	**Depth**																
HA01	05-Jun-23	HA01_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA01_0.3-0.5	0.3-0.5	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
HA02	05-Jun-23	HA02_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA02_0.4-0.6	0.4-0.6	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		QC105	0.4-0.6	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
HA03	05-Jun-23	HA03_0.05-0.2	0.05-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA03_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA04	05-Jun-23	HA04_0.0-0.3	0-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA04_0.3-0.6	0.3-0.6	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		QC106	0.3-0.6	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
	05-Jun-23	QC206	0.3-0.4	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	-	<0.0002	-	<0.0002
HA05	05-Jun-23	HA05_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA06	05-Jun-23	HA06_0.2-0.4	0.2-0.4	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		HA06_0.4-0.6	0.4-0.6	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
HA07	05-Jun-23	HA07_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA07_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA08	02-Jun-23	HA08_0.2-0.4	0.2-0.4	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		HA08_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA09	02-Jun-23	HA09_0.0-0.2	0-0.2	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		HA09_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA10	02-Jun-23	HA10_0.2-0.4	0.2-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA10_0.6-0.8	0.6-0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA11	02-Jun-23	HA11_0.0-0.2	0-0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		HA11_0.4-0.6	0.4-0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP12	17-Apr-23	TP12 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP12 0.6-0.7	0.6-0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP13	17-Apr-23	TP13 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP13 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP14	17-Apr-23	TP14 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP14 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP15	17-Apr-23	TP15 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP15 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP16	17-Apr-23	TP16 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP16 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP17	17-Apr-23	QC101		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		TP17 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP17 0.3-0.4	0.3-0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TP18	17-Apr-23	TP18 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP18 0.3-0.4	0.3-0.4	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
TP19	17-Apr-23	TP19 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP19 0.3-0.4	0.3-0.4	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
TP20	17-Apr-23	QC102		<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP20 0.0-0.1	0-0.1	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		TP20 0.4-0.5	0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

	Inorganics	Asbestos																Metals								BTEXN								TRH - NEPM 2013						
	Moisture (%)	Asbestos from ACM in Soil	ACM - Comment	Asbestos from FA & AF in Soil	AF - Comment	FA- Comment	Approximate Sample Mass	ACM Mass	Mass AF	Mass Asbestos in ACM	Friable Asbestos (FA & AF) - Mass	Mass Asbestos in FA	Mass asbestos in AF	Mass FA	Organic Fibres - Comment	Respirable Fibres - Comment	Asbestos Reported Result	Synthetic Fibres - Comment	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)
	%	%	-	%	-	-	g	g	g	g	g	g	g	g	-	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	1																		2	0.4	5	5	5	0.1	5	5	0.1	0.1	0.1	0.1	0.2	0.3	0.2	0.5	20	20	50	50	100	100	100
NEPM 2013 Table 1A(1) HIL D Comm/Ind																			3000#1	900	3600#2	240000	1500#3	730#4	6000	400000															
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																									
0-1m																											4	NL#8	NL#8			NL#8		NL#8	310#9		NL#8				
1-2m																											6	NL#8	NL#8			NL#8		NL#8	480#9		NL#8				
2-4m																											9	NL#8	NL#8			NL#8		NL#8	NL#8		NL#8				
>4m																											20	NL#8	NL#8			NL#8		NL#8	NL#8		NL#8				
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil		0.05		0.001#10																																					
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																									

Statistical Summary

Number of Results	44	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	44	44	44	44	44	44	44	44	44	44	44	44	44	44	1	44	44	44	44	44	44	44
Number of Detects	44	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	43	1	41	12	44	0	7	37	0	0	0	0	0	0	0	0	0	0	1	1	3	4	4
Minimum Concentration	3	0	1	0	1	1	132	0	0	0	0	0	0	0	1	1	1	1	2.1	<0.4	<5	<5	5.4	<0.1	2	<5	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.2	<0.5	<10	<10	<50	<50	<100	<100	<50
Minimum Detect	3	ND	1	ND	1	1	132	ND	ND	ND	ND	ND	ND	ND	1	1	1	1	2.1	1.1	5	5.3	5.4	ND	2	5.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	230	230	260	180	180
Maximum Concentration	27	0	1	0	1	1	280	0	0	0	0	0	0	0	1	1	1	1	9.5	1.1	18	30	120	<0.1	8.4	200	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<20	<20	230	230	1000	700	1550
Maximum Detect	27	ND	1	ND	1	1	280	ND	ND	ND	ND	ND	ND	ND	1	1	1	1	9.5	1.1	18	30	120	ND	8.4	200	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	230	230	1000	700	1550
Average Concentration	12	0	1	0	1	1	210	0	0	0	0	0	0	0	1	1	1	1	5	0.23	9.5	4.5	18	0.05	3.1	20	0.051	0.055	0.055	0.055	0.1	0.15		0.25	9.9	9.9	31	31	86	83	127
Median Concentration	12	0	1	0	1	1	199	0	0	0	0	0	0	0	1	1	1	1	4.85	0.2	9.05	2.5	13	0.05	2.5	9.2	0.05	0.05	0.05	0.05	0.1	0.15	0.1	0.25	10	10	25	25	50	50	50
Standard Deviation	5	0	0	0	0	0	53	0	0	0	0	0	0	0	0	0	0	0	1.6	0.14	3.8	4.8	18	0	1.6	40	0.0075	0.03	0.03	0.03	0.023	0.015		0	0.75	0.75	31	31	157	120	293

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

	TRH - NEPM 1999					PAHs - standard 16																			OC Pesticides											
	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC	4,4 DDD
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	20	20	50	50	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HIL D Comm/Ind																					4000[#5]	40[#6]	40[#6]	40[#6]						45		530				
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																				
0-1m																																				
1-2m																																				
2-4m																																				
>4m																																				
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																				
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																				

Statistical Summary

Number of Results	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	27	27	28	28	28	28	28	28	1	1	28	28
Number of Detects	0	2	2	6	6	0	0	0	2	2	2	2	3	2	1	2	0	2	1	2	3	2	44	44	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<10	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Minimum Detect	ND	54	260	61	67	ND	ND	ND	0.5	0.6	0.6	0.7	0.6	0.9	0.5	0.8	ND	0.8	0.8	1.8	0.6	0.9	0.6	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<20	140	700	440	1280	<0.5	<0.5	<0.5	0.7	1.3	1.2	1.1	3.6	1.5	0.5	2	<0.5	1.6	0.8	2.6	17	2.3	2.3	2.3	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.05	<0.05	<0.5	<0.5
Maximum Detect	ND	140	700	440	1280	ND	ND	ND	0.7	1.3	1.2	1.1	3.6	1.5	0.5	2	ND	1.6	0.8	2.6	17	2.3	2.3	2.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	9.9	15	47	52	78	0.25	0.25	0.25	0.27	0.28	0.28	0.28	0.38	0.29	0.26	0.3	0.25	0.29	0.26	0.34	0.84	0.31	0.65	1.2	0.13	0.13	0.065	0.065	0.065	0.065	0.065	0.13			0.065	0.065
Median Concentration	10	10	25	25	25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.05	0.05	0.025	0.025	0.025	0.025	0.025	0.05	0.025	0.025	0.025	0.025
Standard Deviation	0.75	21	107	89	211	0	0	0	0.077	0.17	0.15	0.14	0.58	0.21	0.038	0.27	0	0.22	0.083	0.42	2.8	0.32	0.27	0.17	0.18	0.18	0.088	0.088	0.088	0.088	0.088	0.18			0.088	0.088

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

	OC Pesticides																OP Pesticides																			
	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos
	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	50	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	50	0.05	0.5	0.2	0.2	0.2	0.05	0.05	0.2	0.2	0.2	2	0.2	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.05
NEPM 2013 Table 1A(1) HIL D Comm/Ind		3600		2000000				100				50		80000	2500	160							2000													
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																				
0-1m																																				
1-2m																																				
2-4m																																				
>4m																																				
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																				
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																				

Statistical Summary

Number of Results	28	28	28	1	28	28	28	28	28	28	28	28	28	37	28	27	27	28	27	1	1	28	28	28	27	27	27	1	28	28	28	27	27	28	27	1
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.05	<0.05	<0.05	<50	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<2	<0.2	<0.2	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.2	<0.05
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.068	0.065	0.065		0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.065	110	0.068	1.1	0.13	0.12	0.13			0.12	0.12	0.12	1.3	0.13	0.13		0.12	0.12	0.12	0.13	0.13	0.12	0.13	
Median Concentration	0.025	0.025	0.025	25	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	25	0.025	0.25	0.1	0.1	0.1	0.025	0.025	0.1	0.1	0.1	1	0.1	0.1	0.025	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.025
Standard Deviation	0.088	0.088	0.088		0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	0.088	111	0.088	1.9	0.059	0.061	0.059			0.061	0.061	0.061	0.59	0.059	0.059		0.061	0.061	0.061	0.059	0.059	0.061	0.059	

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

	OP Pesticides																			
	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimphos-ethyl	Pirimiphos-methyl	Prothiofos	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.2	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	2	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2
NEPM 2013 Table 1A(1) HIL D Comm/Ind																				
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																				
0-1m																				
1-2m																				
2-4m																				
>4m																				
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																				
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																				

	Chlorinated Hydrocarbons						PCBs							
	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,4-dichlorobenzene	Benzal Chloride	Benzotrichloride	Hexachlorobutadiene	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EQL	0.5	0.5	0.5	0.05	0.05	0.5	100	100	100	100	100	100	100	100
NEPM 2013 Table 1A(1) HIL D Comm/Ind														7000#7
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay														
0-1m														
1-2m														
2-4m														
>4m														
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil														
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)														

Statistical Summary

Number of Results	27	27	28	28	27	28	27	28	27	27	28	27	1	27	1	27	27	27	27	27
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.2	<0.2	<0.05	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.05	<0.2	<0.05	<0.2	<0.2	<0.2	<0.2	<0.2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.05	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.13	0.13	0.12	0.12	0.13	0.13	0.13	1.2	0.13	1.3	0.13	0.13		0.13		0.13	0.13	0.13	0.13	0.13
Median Concentration	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	1	0.1	0.1	0.025	0.1	0.025	0.1	0.1	0.1	0.1	0.1
Standard Deviation	0.059	0.059	0.061	0.061	0.059	0.059	0.059	0.62	0.059	0.59	0.059	0.059		0.059		0.059	0.059	0.059	0.059	0.059

Number of Results	25	25	25	25	25	25	27	27	27	27	27	27	27	28
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<100	<100	<100	<100	<100	<100	<100	<100
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.05	<0.05	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.25	0.25	0.25	0.025	0.025	0.25	133	133	133	133	133	133	133	130
Median Concentration	0.25	0.25	0.25	0.025	0.025	0.25	50	50	50	50	50	50	50	50
Standard Deviation	0	0	0	0	0	0	178	178	178	178	178	178	178	176

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

	SVOCs								VOCs		PFAS - Perfluoroalkyl Sulfonic Acids								PFAS - Perfluoroalkyl Carboxylic Acids										
	1,2,3,4-tetrachlorobenzene	1,2,3,5-Tetrachlorobenzene	1,2,4,5-tetrachlorobenzene	1,3,5-Trichlorobenzene	Benzyl chloride	Hexachlorocyclopentadiene	Hexachloroethane	Pentachlorobenzene	1,2,3-trichlorobenzene	1,3-dichlorobenzene	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononane sulfonate (PFNS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
NEPM 2013 Table 1A(1) HIL D Comm/Ind																													
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																													
0-1m																													
1-2m																													
2-4m																													
>4m																													
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																													
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)														20		20							50						

Statistical Summary

Number of Results	25	25	25	25	25	25	25	25	25	25	21	22	22	22	22	22	21	22	22	22	22	22	22	22	22	22	22	22	22
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.25	0.25	0.25	0.25	0.25	0.3	0.25	0.25	0.25	0.25	0.0025	0.0024	0.0024	0.0024	0.0024	0.0024	0.0025	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024	0.0024
Median Concentration	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Standard Deviation	0	0	0	0	0	0.1	0	0	0	0	0	0.00051	0.00051	0.00051	0.00051	0.00051	0	0.00051	0.00043	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00051	0.00048

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-1
Analytical Results for Hand Auger and Test Pit Samples

	PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums				
	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	6:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	6:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	PFAS (Sum of Total)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	PFAS (Sum of Total)(WA DER List)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.005	0.005	0.005	0.01	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.05	0.005	0.01
NEPM 2013 Table 1A(1) HIL D Comm/Ind																
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																
0-1m																
1-2m																
2-4m																
>4m																
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)												20				

Statistical Summary

Number of Results	22	22	22	22	22	22	22	22	22	22	22	22	21	22	21	22
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.005	<0.0002	<0.005	<0.0002
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.0024	0.0024	0.0024	0.0048	0.0024	0.0024	0.0048	0.0024	0.0048	0.0024	0.0024	0.0024	0.0025	0.024	0.0025	0.0048
Median Concentration	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025	0.005	0.0025	0.0025	0.0025	0.0025	0.025	0.0025	0.005
Standard Deviation	0.00051	0.00048	0.00048	0.001	0.00048	0.00048	0.001	0.00048	0.001	0.00048	0.00048	0.00051	0	0.0053	0	0.001

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-2
Analytical Results for Stockpile Samples

			Inorganics	Asbestos																	Metals								BTEXN							TRH - NEPM 2013						
			Moisture (%)	Asbestos from ACM in Soil	ACM - Comment	Asbestos from FA & AF in Soil	AF - Comment	FA- Comment	Approximate Sample Mass	ACM Mass	Mass AF	Mass Asbestos in ACM	Friable Asbestos (FA & AF) - Mass	Mass Asbestos in FA	Mass asbestos in AF	Mass FA	Organic Fibres - Comment	Respirable Fibres - Comment	Asbestos Reported Result	Synthetic Fibres - Comment	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	Naphthalene	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)
			%	%	-	%	-	-	g	g	g	g	g	g	g	g	-	-	-	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			1																		2	0.4	5	5	5	0.1	5	5	0.1	0.1	0.1	0.1	0.2	0.3	0.5	20	20	50	50	100	100	100
NEPM 2013 Table 1A(1) HIL D Comm/Ind																					3000[#1]	900	3600[#2]	240000	1500[#3]	730[#4]	6000	400000															
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																										
0-1m																													4	NL[#8]	NL[#8]			NL[#8]	NL[#8]	310[#9]		NL[#8]				
1-2m																													6	NL[#8]	NL[#8]			NL[#8]	NL[#8]	480[#9]		NL[#8]				
2-4m																													9	NL[#8]	NL[#8]			NL[#8]	NL[#8]	NL[#8]		NL[#8]				
>4m																													20	NL[#8]	NL[#8]			NL[#8]	NL[#8]	NL[#8]		NL[#8]				
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil				0.05		0.001[#10]																																				
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																										
Location Code	**Sample Date**	**Field ID**																																								
SP01	18-Apr-23	QC103	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.6	<0.4	15	5.1	19	<0.1	<5	24	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
		SP01-01	11	0	1[#4]	0	1[#4]	1[#4]	173	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	4.4	<0.4	14	5.9	24	<0.1	<5	29	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	170	160	330
		SP01-02	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.1	<0.4	12	<5	17	<0.1	<5	18	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
		SP01-03	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.6	<0.4	12	<5	18	<0.1	<5	16	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
		SP01-04	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.4	<0.4	9.6	<5	17	<0.1	<5	21	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	100	<100	100
		SP01-05	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	<0.4	14	5	19	<0.1	<5	19	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	170	140	310
		SP01-06	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	<0.4	11	5.7	22	<0.1	<5	30	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	280	410	690
		SP01-07	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.2	<0.4	9.8	<5	15	<0.1	<5	18	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
		SP01-08	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.5	<0.4	11	<5	20	<0.1	<5	13	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
		SP01-09	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	<0.4	12	6.6	29	<0.1	<5	35	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
		SP01-10	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.9	<0.4	10	<5	16	<0.1	<5	17	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	190	330	520
		SP01-11	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.9	<0.4	7.9	<5	12	<0.1	<5	8.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
SP02	18-Apr-23	QC104	7.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2	<0.4	10	5.3	22	<0.1	<5	17	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	110	110
		SP02-01	13	0	1[#4]	0	1[#4]	1[#4]	123	0	0	0	0	0	0	0	1[#3]	1[#2]	1[#1]	1[#4]	4.2	<0.4	9	5.3	53	<0.1	<5	23	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	150	170	320
		SP02-02	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5.8	<0.4	13	6.6	18	<0.1	<5	21	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	110	140	250
		SP02-03	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.5	<0.4	14	6.7	19	<0.1	5	23	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	170	220	390
Statistical Summary																																										
Number of Results			16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of Detects			16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	16	0	16	9	16	0	1	16	0	0	0	0	0	0	0	0	0	0	0	8	8	9
Minimum Concentration			7.7	0	1	0	1	1	123	0	0	0	0	0	0	0	1	1	1	1	2.9	<0.4	7.9	<5	12	<0.1	<5	8.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	<100	<100	<100
Minimum Detect			7.7	ND	1	ND	1	1	123	ND	ND	ND	ND	ND	ND	ND	1	1	1	1	2.9	ND	7.9	5	12	ND	5	8.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	100	110	100
Maximum Concentration			19	0	1	0	1	1	173	0	0	0	0	0	0	0	1	1	1	1	5.8	<0.4	15	6.7	53	<0.1	5	35	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.5	<20	<20	<50	<50	280	410	690
Maximum Detect			19	ND	1	ND	1	1	173	ND	ND	ND	ND	ND	ND	ND	1	1	1	1	5.8	ND	15	6.7	53	ND	5	35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	280	410	690
Average Concentration			12																		4	0.2	12	4.4	21	0.05	2.7	21	0.05	0.05	0.05	0.05	0.1	0.15	0.25	10	10	25	25	109	130	211
Median Concentration			12	0	1	0	1	1	148	0	0	0	0	0	0	0	1	1	1	1	4.15	0.2	11.5	5.05	19	0.05	2.5	20	0.05	0.05	0.05	0.05	0.1	0.15	0.25	10	10	25	25	75	80	105
Standard Deviation			2.7																		0.85	0	2.1	1.8	9.3	0	0.63	6.7	0	0	0	0	0	0	0	0	0	0	0	71	110	200

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-2
Analytical Results for Stockpile Samples

			TRH - NEPM 1999					PAHs - standard 16																			OC Pesticides											
			C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Phenanthrene	Pyrene	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	d-BHC	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			20	20	50	50	50	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.05	0.05	0.05
NEPM 2013 Table 1A(1) HIL D Comm/Ind																							4000[#5]	40[#6]	40[#6]	40[#6]						45		530				3600
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																						
0-1m																																						
1-2m																																						
2-4m																																						
>4m																																						
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																						
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																						
Location Code	**Sample Date**	**Field ID**																																				
SP01	18-Apr-23	QC103	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-01	<20	<20	56	160	216	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-02	<20	<20	<50	80	80	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-03	<20	<20	<50	57	57	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-04	<20	<20	<50	95	95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-05	<20	37	110	110	257	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-06	<20	<20	130	260	390	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-07	<20	<20	<50	77	77	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-08	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-09	<20	<20	<50	65	65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
		SP01-10	<20	<20	82	190	272	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
		SP01-11	<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
SP02	18-Apr-23	QC104	<20	<20	<50	80	80	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
		SP02-01	<20	<20	81	120	201	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
		SP02-02	<20	<20	<50	100	100	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
		SP02-03	<20	50	90	150	290	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Statistical Summary																																						
Number of Results			16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of Detects			0	2	6	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<20	<20	<50	<50	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05
Minimum Detect			ND	37	56	57	57	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<20	50	130	260	390	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Maximum Detect			ND	50	130	260	390	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.6	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			10	14	50	101	141	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.19	0.19	0.095	0.095	0.095	0.095	0.095	0.19	0.095	0.095	0.095	0.095
Median Concentration			10	10	25	87.5	87.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.05	0.05	0.025	0.025	0.025	0.025	0.025	0.05	0.025	0.025	0.025	0.025
Standard Deviation			0	12	36	64	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.22	0.22	0.11	0.11	0.11	0.11	0.11	0.22	0.11	0.11	0.11	0.11

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-2
Analytical Results for Stockpile Samples

			OC Pesticides													OP Pesticides																							
			Dieldrin	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	50	0.05	0.5	0.2	0.2	0.2	0.2	0.2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NEPM 2013 Table 1A(1) HIL D Comm/Ind							100				50		80000	2500	160					2000																			
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																																							
0-1m																																							
1-2m																																							
2-4m																																							
>4m																																							
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																																							
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																																							
Location Code	**Sample Date**	**Field ID**																																					
SP01	18-Apr-23	QC103	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		SP01-10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
		SP01-11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
SP02	18-Apr-23	QC104	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		SP02-01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		SP02-02	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		SP02-03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Statistical Summary																																							
Number of Results			16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<50	<0.05	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<500	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	95	0.095	1.7	0.15	0.15	0.15	0.15	0.15	0.15	1.5	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Median Concentration			0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	25	0.025	0.25	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Standard Deviation			0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	108	0.11	2.3	0.072	0.072	0.072	0.072	0.072	0.072	0.72	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-2
Analytical Results for Stockpile Samples

			OP Pesticides											PCBs								PFAS - Perfluoroalkyl Sulfonic Acids							
			Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)	Perfluoropropanesulfonic acid (PFPrS)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorononane sulfonate (PFNS)	Perfluorodecanesulfonic acid (PFDS)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			2	0.2	2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	100	100	100	100	100	100	100	100	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
NEPM 2013 Table 1A(1) HIL D Comm/Ind																					7000#7								
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																													
0-1m																													
1-2m																													
2-4m																													
>4m																													
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																													
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)																									20		20		
Location Code	**Sample Date**	**Field ID**																											
SP01	18-Apr-23	QC103	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-01	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-02	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-03	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-04	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-05	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-06	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-07	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-08	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-09	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-10	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP01-11	<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
SP02	18-Apr-23	QC104	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	-	-	-	-	-	-	-	-
		SP02-01	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP02-02	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
		SP02-03	<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Statistical Summary																													
Number of Results			16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	15	15	15	15	15	15	15	15
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<100	<100	<100	<100	<100	<100	<100	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<5	<0.5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<1000	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			1.5	0.15	1.5	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	191	191	191	191	191	191	191	191	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Median Concentration			1	0.1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	50	50	50	50	50	50	50	50	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025
Standard Deviation			0.72	0.072	0.72	0.072	0.072	0.072	0.072	0.072	0.072	0.072	0.072	215	215	215	215	215	215	215	215	0	0	0	0	0	0	0	0

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix D
Table D-2
Analytical Results for Stockpile Samples

			PFAS - Perfluoroalkyl Carboxylic Acids											PFAS - Perfluoroalkyl Sulfonamide							PFAS - Fluorotelomer Sulfonic Acids				PFAS - Sums				
			Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorooctane sulfonamide (FOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	6:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	6:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)*	PFAS (Sum of Total)	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	PFAS (Sum of Total)(WA DER List)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.01	0.005	0.01	0.005	0.005	0.005	0.005	0.05	0.005	0.01
NEPM 2013 Table 1A(1) HIL D Comm/Ind																														
NEPM 2013 Table 1A(3) HSL D Comm/Ind Soil for Vapour Intrusion, Clay																														
0-1m																														
1-2m																														
2-4m																														
>4m																														
NEPM 2013 Table 7 HSL D Comm/Ind Asbestos contamination in soil																														
PFAS NEMP 2.0 2020 Industrial/ commercial (HIL D)							50																		20					
Location Code	**Sample Date**	**Field ID**																												
SP01	18-Apr-23	QC103	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-04	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-05	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-06	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-07	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-08	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-10	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP01-11	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
SP02	18-Apr-23	QC104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		SP02-01	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP02-02	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01
		SP02-03	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.01

Statistical Summary

Number of Results	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.01
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025	0.005	0.0025	0.0025	0.0025	0.0025	0.025	0.0025	0.005
Median Concentration	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.0025	0.005	0.0025	0.0025	0.005	0.0025	0.005	0.0025	0.0025	0.0025	0.0025	0.025	0.0025	0.005
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*A Non-Detect Multiplier of 0.5 has been applied.

Environmental Standards Comments

#1:Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#2:In the absence of a guideline value for total chromium, chromium VI value adopted
#3:Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#4:Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#5:Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#6:Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#7:PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
#8:Not limiting: Derived soil HSL exceeds soil saturation concentration
#9:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#10:Only applies where the FA & AF are able to be quantified by gravimetric procedures. Not applicable to free fibres.

Data Comments

#1 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No trace asbestos detected.
#2 No trace asbestos detected.

Appendix E

Chain of custody and laboratory analytical certificates

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 45 51	Tel: 0800 856 450
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd ACT
Contact name:	Rachel Stuckey
Project name:	HUME FOGO TARGETED SITE INVESTIGATION
Project ID:	12540460
Turnaround time:	5 Day
Date/Time received	Apr 18, 2023 4:06 PM
Eurofins reference	981966

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✗ All samples have been received as described on the above COC.
- ✗ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✗ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Please note that some soil jars got drenched in water.
All the following changes have been made as per the client request:
QC 201 and QC 202 forwarded to ALS.
Samples on hold - TP18 0.5-0.6.
Samples not on COC received: TP14 0.5-0.6, TP14 0.1-0.2 on hold.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Rachel Stuckey - Rachel.Stuckey@ghd.com.au.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd ACT email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	TP12 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037837			X	X	X	X	X
2	TP12 0.6-0.7	Apr 17, 2023		Soil	R23-Ap0037838			X		X	X	
3	TP13 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037839	X		X	X	X	X	X
4	TP13 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037840			X		X	X	
5	TP14 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037841			X		X	X	X
6	TP14 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037842			X	X	X	X	
7	TP15 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037843			X	X	X	X	X
8	TP15 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037844			X		X	X	
9	TP16 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037845	X		X	X	X	X	X
10	TP16 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037846	X		X		X	X	
11	TP17 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037847	X		X	X	X	X	X
12	TP17 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037848			X	X	X	X	

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
13	TP18 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037849	X		X	X	X	X	X
14	TP18 0.5-0.6	Apr 17, 2023		Soil	R23-Ap0037850		X					
15	TP19 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037851	X		X	X	X	X	X
16	TP19 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037852			X		X	X	X
17	TP20 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037853	X		X	X	X	X	X
18	TP20 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037854			X	X	X	X	
19	QC101	Apr 17, 2023		Soil	R23-Ap0037855			X	X	X	X	
20	QC102	Apr 17, 2023		Soil	R23-Ap0037857			X	X	X	X	X
21	SP01-01	Apr 18, 2023		Soil	R23-Ap0037859	X			X	X	X	X
22	SP01-02	Apr 18, 2023		Soil	R23-Ap0037860				X	X	X	X
23	SP01-03	Apr 18, 2023		Soil	R23-Ap0037861				X	X	X	X
24	SP01-04	Apr 18, 2023		Soil	R23-Ap0037862				X	X	X	X
25	SP01-05	Apr 18, 2023		Soil	R23-Ap0037863				X	X	X	X
26	SP01-06	Apr 18, 2023		Soil	R23-Ap0037864				X	X	X	X
27	SP01-07	Apr 18, 2023		Soil	R23-Ap0037865				X	X	X	X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
28	SP01-08	Apr 18, 2023		Soil	R23-Ap0037866				X	X	X	X
29	SP01-09	Apr 18, 2023		Soil	R23-Ap0037867				X	X	X	X
30	SP01-10	Apr 18, 2023		Soil	R23-Ap0037868				X	X	X	X
31	SP01-11	Apr 18, 2023		Soil	R23-Ap0037869				X	X	X	X
32	SP02-01	Apr 18, 2023		Soil	R23-Ap0037870	X			X	X	X	X
33	SP02-02	Apr 18, 2023		Soil	R23-Ap0037871				X	X	X	X
34	SP02-03	Apr 18, 2023		Soil	R23-Ap0037872				X	X	X	X
35	QC103	Apr 18, 2023		Soil	R23-Ap0037873				X	X	X	X
36	QC104	Apr 18, 2023		Soil	R23-Ap0037874				X	X	X	
37	TP12 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037875		X					
38	TP12 0.8-0.9	Apr 17, 2023		Soil	R23-Ap0037876		X					
39	TP12 1.2-1.3	Apr 17, 2023		Soil	R23-Ap0037877		X					
40	TP13 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037878		X					
41	TP13 0.6-0.7	Apr 17, 2023		Soil	R23-Ap0037879		X					
42	TP13 1.4-1.5	Apr 17, 2023		Soil	R23-Ap0037880		X					

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
43	TP14 0.9-1.0	Apr 17, 2023		Soil	R23-Ap0037881		X					
44	TP14 1.1-1.2	Apr 17, 2023		Soil	R23-Ap0037882		X					
45	TP15 0.1-0.2	Apr 17, 2023		Soil	R23-Ap0037883		X					
46	TP15 1.0-1.1	Apr 17, 2023		Soil	R23-Ap0037884		X					
47	TP15 1.4-1.5	Apr 17, 2023		Soil	R23-Ap0037885		X					
48	TP16 0.2-0.3	Apr 17, 2023		Soil	R23-Ap0037886		X					
49	TP16 1.2-1.3	Apr 17, 2023		Soil	R23-Ap0037887		X					
50	TP17 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037888		X					
51	TP18 0.7-0.8	Apr 17, 2023		Soil	R23-Ap0037890		X					
52	TP18 0.9-1.0	Apr 17, 2023		Soil	R23-Ap0037891		X					
53	TP19 0.5-0.6	Apr 17, 2023		Soil	R23-Ap0037892		X					
54	TP19 0.9-1.0	Apr 17, 2023		Soil	R23-Ap0037893		X					
55	TP19 1.4-1.5	Apr 17, 2023		Soil	R23-Ap0037894		X					
56	TP20 0.8-0.9	Apr 17, 2023		Soil	R23-Ap0037896		X					
57	TP20 1.0-1.1	Apr 17, 2023		Soil	R23-Ap0037897		X					

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
58	TP14 0.5-0.6	Apr 17, 2023		Soil	R23-Ap0038215		X					
59	TP14 0.1-0.2	Apr 17, 2023		Soil	R23-Ap0038216		X					
60	TP17 1.0-1.2	Apr 17, 2023		Soil	R23-Ap0038217		X					
61	TP20 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0038218		X					
62	TP18 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0038234			X		X	X	X
Test Counts						9	26	20	29	36	36	28

Certificate of Analysis

eurofins | Environment Testing

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

GHD Pty Ltd ACT
Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Attention:	Rachel Stuckey
Report	981966-AID
Project Name	HUME FOGO TARGETED SITE INVESTIGATION
Project ID	12540460
Received Date	Apr 18, 2023
Date Reported	May 02, 2023

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name HUME FOGO TARGETED SITE INVESTIGATION
Project ID 12540460
Date Sampled Apr 17, 2023 to Apr 18, 2023
Report 981966-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP13 0.0-0.1	23-Ap0037839	Apr 17, 2023	Approximate Sample 280g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP16 0.0-0.1	23-Ap0037845	Apr 17, 2023	Approximate Sample 132g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP16 0.4-0.5	23-Ap0037846	Apr 17, 2023	Approximate Sample 275g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP17 0.0-0.1	23-Ap0037847	Apr 17, 2023	Approximate Sample 258g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP18 0.0-0.1	23-Ap0037849	Apr 17, 2023	Approximate Sample 199g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP19 0.0-0.1	23-Ap0037851	Apr 17, 2023	Approximate Sample 225g Sample consisted of: Brown coarse-grained sandy soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
TP20 0.0-0.1	23-Ap0037853	Apr 17, 2023	Approximate Sample 185g Sample consisted of: Brown coarse-grained sandy soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
SP01-01	23-Ap0037859	Apr 18, 2023	Approximate Sample 173g Sample consisted of: Brown coarse-grained sandy soil, cement and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
SP02-01	23-Ap0037870	Apr 18, 2023	Approximate Sample 123g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Apr 19, 2023	Indefinite

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Apr 18, 2023 4:06 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	981966	**Due:**	Apr 26, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO TARGETED SITE INVESTIGATION				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	TP12 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037837			X	X	X	X	X
2	TP12 0.6-0.7	Apr 17, 2023		Soil	R23-Ap0037838			X		X	X	
3	TP13 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037839	X		X	X	X	X	X
4	TP13 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037840			X		X	X	
5	TP14 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037841			X		X	X	X
6	TP14 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037842			X	X	X	X	
7	TP15 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037843			X	X	X	X	X
8	TP15 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037844			X		X	X	
9	TP16 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037845	X		X	X	X	X	X
10	TP16 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037846	X		X		X	X	
11	TP17 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037847	X		X	X	X	X	X
12	TP17 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037848			X	X	X	X	

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
13	TP18 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037849	X		X	X	X	X	X
14	TP18 0.5-0.6	Apr 17, 2023		Soil	R23-Ap0037850		X					
15	TP19 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037851	X		X	X	X	X	X
16	TP19 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037852			X		X	X	X
17	TP20 0.0-0.1	Apr 17, 2023		Soil	R23-Ap0037853	X		X	X	X	X	X
18	TP20 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037854			X	X	X	X	
19	QC101	Apr 17, 2023		Soil	R23-Ap0037855			X	X	X	X	
20	QC102	Apr 17, 2023		Soil	R23-Ap0037857			X	X	X	X	X
21	SP01-01	Apr 18, 2023		Soil	R23-Ap0037859	X			X	X	X	X
22	SP01-02	Apr 18, 2023		Soil	R23-Ap0037860				X	X	X	X
23	SP01-03	Apr 18, 2023		Soil	R23-Ap0037861				X	X	X	X
24	SP01-04	Apr 18, 2023		Soil	R23-Ap0037862				X	X	X	X
25	SP01-05	Apr 18, 2023		Soil	R23-Ap0037863				X	X	X	X
26	SP01-06	Apr 18, 2023		Soil	R23-Ap0037864				X	X	X	X
27	SP01-07	Apr 18, 2023		Soil	R23-Ap0037865				X	X	X	X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Apr 18, 2023 4:06 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	981966	**Due:**	Apr 26, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO TARGETED SITE INVESTIGATION				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
28	SP01-08	Apr 18, 2023		Soil	R23-Ap0037866				X	X	X	X
29	SP01-09	Apr 18, 2023		Soil	R23-Ap0037867				X	X	X	X
30	SP01-10	Apr 18, 2023		Soil	R23-Ap0037868				X	X	X	X
31	SP01-11	Apr 18, 2023		Soil	R23-Ap0037869				X	X	X	X
32	SP02-01	Apr 18, 2023		Soil	R23-Ap0037870	X			X	X	X	X
33	SP02-02	Apr 18, 2023		Soil	R23-Ap0037871				X	X	X	X
34	SP02-03	Apr 18, 2023		Soil	R23-Ap0037872				X	X	X	X
35	QC103	Apr 18, 2023		Soil	R23-Ap0037873				X	X	X	X
36	QC104	Apr 18, 2023		Soil	R23-Ap0037874				X	X	X	
37	TP12 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037875		X					
38	TP12 0.8-0.9	Apr 17, 2023		Soil	R23-Ap0037876		X					
39	TP12 1.2-1.3	Apr 17, 2023		Soil	R23-Ap0037877		X					
40	TP13 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0037878		X					
41	TP13 0.6-0.7	Apr 17, 2023		Soil	R23-Ap0037879		X					
42	TP13 1.4-1.5	Apr 17, 2023		Soil	R23-Ap0037880		X					

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 981966
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Apr 18, 2023 4:06 PM
Due: Apr 26, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO TARGETED SITE INVESTIGATION
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
43	TP14 0.9-1.0	Apr 17, 2023		Soil	R23-Ap0037881		X					
44	TP14 1.1-1.2	Apr 17, 2023		Soil	R23-Ap0037882		X					
45	TP15 0.1-0.2	Apr 17, 2023		Soil	R23-Ap0037883		X					
46	TP15 1.0-1.1	Apr 17, 2023		Soil	R23-Ap0037884		X					
47	TP15 1.4-1.5	Apr 17, 2023		Soil	R23-Ap0037885		X					
48	TP16 0.2-0.3	Apr 17, 2023		Soil	R23-Ap0037886		X					
49	TP16 1.2-1.3	Apr 17, 2023		Soil	R23-Ap0037887		X					
50	TP17 0.4-0.5	Apr 17, 2023		Soil	R23-Ap0037888		X					
51	TP18 0.7-0.8	Apr 17, 2023		Soil	R23-Ap0037890		X					
52	TP18 0.9-1.0	Apr 17, 2023		Soil	R23-Ap0037891		X					
53	TP19 0.5-0.6	Apr 17, 2023		Soil	R23-Ap0037892		X					
54	TP19 0.9-1.0	Apr 17, 2023		Soil	R23-Ap0037893		X					
55	TP19 1.4-1.5	Apr 17, 2023		Soil	R23-Ap0037894		X					
56	TP20 0.8-0.9	Apr 17, 2023		Soil	R23-Ap0037896		X					
57	TP20 1.0-1.1	Apr 17, 2023		Soil	R23-Ap0037897		X					

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Apr 18, 2023 4:06 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	981966	**Due:**	Apr 26, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO TARGETED SITE INVESTIGATION				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X
58	TP14 0.5-0.6	Apr 17, 2023		Soil	R23-Ap0038215		X					
59	TP14 0.1-0.2	Apr 17, 2023		Soil	R23-Ap0038216		X					
60	TP17 1.0-1.2	Apr 17, 2023		Soil	R23-Ap0038217		X					
61	TP20 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0038218		X					
62	TP18 0.3-0.4	Apr 17, 2023		Soil	R23-Ap0038234			X		X	X	X
Test Counts						9	26	20	29	36	36	28

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	No
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos

Authorised by:

Laxman Dias	Senior Analyst-Asbestos

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West NSW 2304
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	Tel: +61 2 4968 8448
Tel: +61 3 8564 5000	Tel: +61 3 8564 5000	Tel: +61 2 9900 8400	Tel: +61 2 6113 8091	Tel: +61 7 3902 4600	NATA# 1261
NATA# 1261 Site# 1254	NATA# 1261 Site# 25403	NATA# 1261 Site# 18217	NATA# 1261 Site# 25466	NATA# 1261 Site# 20794	Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Christchurch
35 O'Rorke Road	43 Detroit Drive
Penrose,	Rolleston,
Auckland 1061	Christchurch 7675
Tel: +64 9 526 4551	Tel: +64 3 343 5201
IANZ# 1327	IANZ# 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd ACT
Contact name:	Rachel Stuckey
Project name:	HUME FOGO AND MRF PROJECT DELIVERY
Project ID:	12540460
Turnaround time:	5 Day
Date/Time received	Jun 5, 2023 3:40 PM
Eurofins reference	995981

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✗ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- **N/A** Custody Seals intact (if used).

Notes

QC301 analysis has been updated as per conversation with client. QC206 to be sent to ALS. HA05_0.0-0.2, HA05_0.5-0.7, HA05_0.9-1.1 were received but are not on the CoC. Analysis has been added to samples as per conversation with client. Q3504 not received so has been cancelled. Two vials labelled QC503, one a trip spike and one a trip blank received with only one QC503 on the CoC. These two have been distinguished by adding (spike) and (blank) to the label.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: BonniePu@eurofins.com

Results will be delivered electronically via email to Rachel Stuckey - Rachel.Stuckey@ghd.com.au.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd ACT email address.

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 995981
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Jun 5, 2023 3:40 PM
Due: Jun 13, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO AND MRF PROJECT DELIVERY
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	HA08_0.2-0.4	Jun 02, 2023		Soil	R23-Jn0009787					X	X	X		X	
2	HA08_0.4-0.6	Jun 02, 2023		Soil	R23-Jn0009788				X	X	X	X			
3	HA10_0.2-0.4	Jun 02, 2023		Soil	R23-Jn0009789						X	X			
4	HA10_0.6-0.8	Jun 02, 2023		Soil	R23-Jn0009790						X	X			
5	HA09_0.0-0.2	Jun 02, 2023		Soil	R23-Jn0009791					X	X	X		X	
6	HA09_0.2-0.4	Jun 02, 2023		Soil	R23-Jn0009792					X	X	X			
7	HA11_0.0-0.2	Jun 02, 2023		Soil	R23-Jn0009793						X	X			
8	HA11_0.4-0.6	Jun 02, 2023		Soil	R23-Jn0009794						X	X			
9	HA06_0.2-0.4	Jun 05, 2023		Soil	R23-Jn0009795					X	X	X		X	
10	HA06_0.4-0.6	Jun 05, 2023		Soil	R23-Jn0009796					X	X	X		X	
11	HA07_0.0-0.2	Jun 05, 2023		Soil	R23-Jn0009797					X	X	X			
12	HA07_0.2-0.4	Jun 05, 2023		Soil	R23-Jn0009798				X		X	X			
13	HA02_0.0-0.3	Jun 05, 2023		Soil	R23-Jn0009799				X		X	X			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 995981
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Jun 5, 2023 3:40 PM
Due: Jun 13, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO AND MRF PROJECT DELIVERY
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
14	HA02_0.4-0.6	Jun 05, 2023		Soil	R23-Jn0009800					X	X	X		X	
15	QC105	Jun 05, 2023		Soil	R23-Jn0009801					X	X	X		X	
16	HA01_0.0-0.3	Jun 05, 2023		Soil	R23-Jn0009802				X	X	X	X			
17	HA01_0.3-0.5	Jun 05, 2023		Soil	R23-Jn0009803					X	X	X		X	
18	HA04_0.0-0.3	Jun 05, 2023		Soil	R23-Jn0009804						X	X			
19	HA04_0.3-0.6	Jun 05, 2023		Soil	R23-Jn0009805	X				X	X	X		X	
20	QC106	Jun 05, 2023		Soil	R23-Jn0009806					X	X	X		X	
21	HA03_0.05-0.2	Jun 05, 2023		Soil	R23-Jn0009807	X					X	X			
22	HA03_0.2-0.4	Jun 05, 2023		Soil	R23-Jn0009808				X	X	X	X			
23	QC501	Jun 05, 2023		Soil	R23-Jn0009809						X				X
24	QC502	Jun 05, 2023		Soil	R23-Jn0009810						X		X		
25	QC503 (blank)	Jun 05, 2023		Soil	R23-Jn0009811						X		X		
26	Q3504	Jun 05, 2023		Soil	R23-Jn0009812		X								
27	HA08_0.6-0.7	Jun 02, 2023		Soil	R23-Jn0009813			X							
28	HA10_1.0-1.1	Jun 02, 2023		Soil	R23-Jn0009814			X							
29	HA09_0.6-0.8	Jun 02, 2023		Soil	R23-Jn0009815			X							

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Order No.: 12540460
Report #: 995981
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Jun 5, 2023 3:40 PM
Due: Jun 13, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Project Name: HUME FOGO AND MRF PROJECT DELIVERY
Project ID: 12540460

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
30	HA09_1.2-1.5	Jun 02, 2023		Soil	R23-Jn0009816			X							
31	HA11_0.8-1.0	Jun 02, 2023		Soil	R23-Jn0009817			X							
32	HA06_0.0-0.2	Jun 05, 2023		Soil	R23-Jn0009818			X							
33	HA06_0.9-1.1	Jun 05, 2023		Soil	R23-Jn0009819			X							
34	HA07_0.4-0.7	Jun 05, 2023		Soil	R23-Jn0009820			X							
35	HA07_0.7-0.9	Jun 05, 2023		Soil	R23-Jn0009821			X							
36	HA02_0.9-1.1	Jun 05, 2023		Soil	R23-Jn0009822			X							
37	HA01_0.5-0.7	Jun 05, 2023		Soil	R23-Jn0009823			X							
38	HA01_0.7-1.0	Jun 05, 2023		Soil	R23-Jn0009824			X							
39	HA04_1.1-1.3	Jun 05, 2023		Soil	R23-Jn0009825			X							
40	HA03_0.5-0.7	Jun 05, 2023		Soil	R23-Jn0009826			X							
41	QC301	Jun 05, 2023		Water	R23-Jn0009827					X		X			
42	HA05_0.0-0.2	Jun 05, 2023		Soil	R23-Jn0011632						X	X			
43	HA05_0.5-0.7	Jun 05, 2023		Soil	R23-Jn0011633			X							
44	HA05_0.9-1.1	Jun 05, 2023		Soil	R23-Jn0011634			X							
45	QC503 (spike)	Jun 05, 2023		Soil	R23-Jn0011635						X				X

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Jun 5, 2023 3:40 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	995981	**Due:**	Jun 13, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO AND MRF PROJECT DELIVERY				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail	Asbestos - WA guidelines	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X	X	X	X	X	X	X	X
Test Counts	2	1	16	5	15	27	24	2	9	2

eurofins | Environment Testing

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

GHD Pty Ltd ACT
Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Attention:	Rachel Stuckey
Report	995981-AID-V2
Project Name	HUME FOGO AND MRF PROJECT DELIVERY
Project ID	12540460
Received Date	Jun 05, 2023
Date Reported	Jun 16, 2023

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name HUME FOGO AND MRF PROJECT DELIVERY
Project ID 12540460
Date Sampled Jun 05, 2023
Report 995981-AID-V2

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
HA04_0.3-0.6	23-Jn0009805	Jun 05, 2023	Approximate Sample 185g Sample consisted of: Brown fine-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
HA03_0.05-0.2	23-Jn0009807	Jun 05, 2023	Approximate Sample 155g Sample consisted of: Brown fine-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jun 15, 2023	Indefinite

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Jun 5, 2023 3:40 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	995981	**Due:**	Jun 13, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO AND MRF PROJECT DELIVERY				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	HA08_0.2-0.4	Jun 02, 2023		Soil	R23-Jn0009787					X	X	X		X	
2	HA08_0.4-0.6	Jun 02, 2023		Soil	R23-Jn0009788				X	X	X	X			
3	HA10_0.2-0.4	Jun 02, 2023		Soil	R23-Jn0009789						X	X			
4	HA10_0.6-0.8	Jun 02, 2023		Soil	R23-Jn0009790						X	X			
5	HA09_0.0-0.2	Jun 02, 2023		Soil	R23-Jn0009791					X	X	X		X	
6	HA09_0.2-0.4	Jun 02, 2023		Soil	R23-Jn0009792					X	X	X			
7	HA11_0.0-0.2	Jun 02, 2023		Soil	R23-Jn0009793						X	X			
8	HA11_0.4-0.6	Jun 02, 2023		Soil	R23-Jn0009794						X	X			
9	HA06_0.2-0.4	Jun 05, 2023		Soil	R23-Jn0009795					X	X	X		X	
10	HA06_0.4-0.6	Jun 05, 2023		Soil	R23-Jn0009796					X	X	X		X	
11	HA07_0.0-0.2	Jun 05, 2023		Soil	R23-Jn0009797					X	X	X			
12	HA07_0.2-0.4	Jun 05, 2023		Soil	R23-Jn0009798				X		X	X			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Jun 5, 2023 3:40 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	995981	**Due:**	Jun 13, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO AND MRF PROJECT DELIVERY				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
13	HA02_0.0-0.3	Jun 05, 2023		Soil	R23-Jn0009799				X		X	X			
14	HA02_0.4-0.6	Jun 05, 2023		Soil	R23-Jn0009800					X	X	X		X	
15	QC105	Jun 05, 2023		Soil	R23-Jn0009801					X	X	X		X	
16	HA01_0.0-0.3	Jun 05, 2023		Soil	R23-Jn0009802				X	X	X	X			
17	HA01_0.3-0.5	Jun 05, 2023		Soil	R23-Jn0009803					X	X	X		X	
18	HA04_0.0-0.3	Jun 05, 2023		Soil	R23-Jn0009804						X	X			
19	HA04_0.3-0.6	Jun 05, 2023		Soil	R23-Jn0009805	X				X	X	X		X	
20	QC106	Jun 05, 2023		Soil	R23-Jn0009806					X	X	X		X	
21	HA03_0.05-0.2	Jun 05, 2023		Soil	R23-Jn0009807	X					X	X			
22	HA03_0.2-0.4	Jun 05, 2023		Soil	R23-Jn0009808				X	X	X	X			
23	QC501	Jun 05, 2023		Trip Spike (solid)	R23-Jn0009809										X
24	QC502	Jun 05, 2023		Trip Blank (solid)	R23-Jn0009810								X		
25	QC503 (blank)	Jun 05, 2023		Trip Blank (solid)	R23-Jn0009811								X		

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name: GHD Pty Ltd ACT
Address: Level 7/16 Marcus Clarke St
Canberra
ACT 2601

Project Name: HUME FOGO AND MRF PROJECT DELIVERY
Project ID: 12540460

Order No.: 12540460
Report #: 995981
Phone: 02 6253 1999
Fax: 02 6253 1911

Received: Jun 5, 2023 3:40 PM
Due: Jun 13, 2023
Priority: 5 Day
Contact Name: Rachel Stuckey

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
26	Q3504	Jun 05, 2023		Soil	R23-Jn0009812		X								
27	HA08_0.6-0.7	Jun 02, 2023		Soil	R23-Jn0009813			X							
28	HA10_1.0-1.1	Jun 02, 2023		Soil	R23-Jn0009814			X							
29	HA09_0.6-0.8	Jun 02, 2023		Soil	R23-Jn0009815			X							
30	HA09_1.2-1.5	Jun 02, 2023		Soil	R23-Jn0009816			X							
31	HA11_0.8-1.0	Jun 02, 2023		Soil	R23-Jn0009817			X							
32	HA06_0.0-0.2	Jun 05, 2023		Soil	R23-Jn0009818			X							
33	HA06_0.9-1.1	Jun 05, 2023		Soil	R23-Jn0009819			X							
34	HA07_0.4-0.7	Jun 05, 2023		Soil	R23-Jn0009820			X							
35	HA07_0.7-0.9	Jun 05, 2023		Soil	R23-Jn0009821			X							
36	HA02_0.9-1.1	Jun 05, 2023		Soil	R23-Jn0009822			X							
37	HA01_0.5-0.7	Jun 05, 2023		Soil	R23-Jn0009823			X							
38	HA01_0.7-1.0	Jun 05, 2023		Soil	R23-Jn0009824			X							
39	HA04_1.1-1.3	Jun 05, 2023		Soil	R23-Jn0009825			X							
40	HA03_0.5-0.7	Jun 05, 2023		Soil	R23-Jn0009826			X							

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091
NATA# 1261 Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
1/2 Frost Drive
Mayfield West NSW 2304
Tel: +61 2 4968 8448
NATA# 1261
Site# 25079 & 25289

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 4551
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: +64 3 343 5201
IANZ# 1290

Company Name:	GHD Pty Ltd ACT	**Order No.:**	12540460	**Received:**	Jun 5, 2023 3:40 PM
Address:	Level 7/16 Marcus Clarke St Canberra ACT 2601	**Report #:**	995981	**Due:**	Jun 13, 2023
		Phone:	02 6253 1999	**Priority:**	5 Day
		Fax:	02 6253 1911	**Contact Name:**	Rachel Stuckey
Project Name:	HUME FOGO AND MRF PROJECT DELIVERY				
Project ID:	12540460				

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Asbestos - AS4964	CANCELLED	HOLD	Chlorinated Hydrocarbons	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254												X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X	X	X	X	X
41	QC301	Jun 05, 2023		Water	R23-Jn0009827					X		X			
42	HA05_0.0-0.2	Jun 05, 2023		Soil	R23-Jn0011632						X	X			
43	HA05_0.5-0.7	Jun 05, 2023		Soil	R23-Jn0011633			X							
44	HA05_0.9-1.1	Jun 05, 2023		Soil	R23-Jn0011634			X							
Test Counts						2	1	16	5	15	23	24	2	9	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos

Authorised by:

Chamath JHM Annakkage	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2319109**	Page	: 1 of 9
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Rachel Stuckey	Contact	: Sarah Mathew
Address	: LEVEL 7, 16 MARCUS CLARKE ST CANBERRA ACT, AUSTRALIA 2601	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 12540460	Date Samples Received	: 08-Jun-2023 11:00
Order number	: 12540460	Date Analysis Commenced	: 13-Jun-2023
C-O-C number	: ----	Issue Date	: 15-Jun-2023 16:10
Sampler	: Rachel Stuckey		
Site	: Hume FOGO and MRF Project Delivery		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EG005T: Poor precision was obtained for Zinc on sample ES2319025 # 007. Confirmed by re-digestion and reanalysis.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC206	----	----	----	----
			Sampling date / time	05-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319109-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**4.6**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**5**	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	**9**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**2**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**7**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC206	----	----	----	----
			Sampling date / time	05-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319109-001	--------	--------	--------	--------
				Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC206	----	----	----	----
			Sampling date / time	05-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319109-001	--------	--------	--------	--------
				Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC206	----	----	----	----
			Sampling date / time	05-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319109-001	--------	--------	--------	--------
				Result	----	----	----	----
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC206	----	----	----	----
			Sampling date / time	05-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319109-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	----	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**101**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**88.1**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC206	----	----	----	----
			Sampling date / time	05-Jun-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2319109-001	--------	--------	--------	--------
				Result	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate - Continued								
DEF	78-48-8	0.05	%	**89.6**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**117**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**91.2**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**83.5**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**93.7**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**99.4**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**90.2**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**112**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	**104**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**95.3**	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**104**	----	----	----	----
13C8-PFOA	----	0.0002	%	**104**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2319109**	Page	: 1 of 13
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Rachel Stuckey	Contact	: Sarah Mathew
Address	: LEVEL 7, 16 MARCUS CLARKE ST CANBERRA ACT, AUSTRALIA 2601	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 12540460	Date Samples Received	: 08-Jun-2023
Order number	: 12540460	Date Analysis Commenced	: 13-Jun-2023
C-O-C number	: ----	Issue Date	: 15-Jun-2023
Sampler	: Rachel Stuckey		
Site	: Hume FOGO and MRF Project Delivery		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5109477)									
ES2319025-007	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2	80.3	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	23	24	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	18	75.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	14	74.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	132	148	11.9	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	128	139	8.8	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	132	# 189	35.7	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5109478)									
ES2319109-001	QC206	EA055: Moisture Content	----	0.1	%	4.6	4.5	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5109476)									
ES2319025-007	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5107171)									
ES2319109-001	QC206	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5107172)									
ES2319109-001	QC206	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5107172) - continued									
ES2319109-001	QC206	EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5107172)									
ES2319109-001	QC206	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5107169)									
ES2319109-001	QC206	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
				Laboratory Duplicate (DUP) Report					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5107169) - continued									
ES2319109-001	QC206	EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5107170)									
ES2319109-001	QC206	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5108707)									
ES2319132-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5107170)									
ES2319109-001	QC206	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5108707)									
ES2319132-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5108707)									
ES2319132-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5106466)									
ES2318846-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5106466) - continued									
ES2318846-004	Anonymous	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ES2319025-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0012	0.0010	27.1	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5106466)									
ES2318846-004	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ES2319025-006	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5106466)									
ES2318846-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5106466) - continued									
ES2318846-004	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2319025-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5106466)									
ES2318846-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ES2319025-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5109477)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	104	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	92.8	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	120	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	103	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	101	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	89.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5109476)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	94.2	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5107171)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	82.9	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5107172)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.1	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	89.9	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	79.6	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	85.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	90.9	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.6	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.7	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	100.0	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.7	62.0	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 5107172) - continued								
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	85.4	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.2	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	85.9	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5107172)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	94.1	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.1	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	87.6	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.5	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	81.3	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.4	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	72.0	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5107169)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	99.3	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	90.7	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	97.0	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	95.2	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	101	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	94.2	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	103	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	102	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.8	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	100	75.0	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5107169) - continued								
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	107	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	84.4	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	92.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	91.0	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	88.1	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5107170)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	109	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	102	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	105	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5108707)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	97.4	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5107170)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	109	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	99.1	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	104	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5108707)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	100.0	72.4	133
EP080: BTEXN (QCLot: 5108707)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	107	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	96.9	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.6	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	96.5	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	94.7	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.6	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5106466)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5106466)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5106466) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	105	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	113	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5106466)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	108	71.6	129
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.5	69.8	131
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	68.7	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	112	65.1	134
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5106466)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	108	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	104	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	98.4	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	109	69.2	143

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5109477)							
ES2319025-007	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	106	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	84.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	120	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	96.6	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	98.6	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	115	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5109476)							
ES2319025-007	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	98.8	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5107171)							
ES2319109-001	QC206	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	103	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5107172)							
ES2319109-001	QC206	EP068: gamma-BHC	58-89-9	0.5 mg/kg	107	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	98.1	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	98.9	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	83.1	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	95.5	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	86.8	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5107172)							
ES2319109-001	QC206	EP068: Diazinon	333-41-5	0.5 mg/kg	82.9	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	91.9	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	97.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	98.1	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	86.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5107169)							
ES2319109-001	QC206	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	95.9	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5107170)							
ES2319109-001	QC206	EP071: C10 - C14 Fraction	----	480 mg/kg	119	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	122	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	118	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5108707)							
ES2319132-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	75.3	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5107170)							
ES2319109-001	QC206	EP071: >C10 - C16 Fraction	----	860 mg/kg	110	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	119	53.0	131

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5107170) - continued							
ES2319109-001	QC206	EP071: >C34 - C40 Fraction	----	890 mg/kg	109	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5108707)							
ES2319132-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	71.5	61.1	142
EP080: BTEXN (QCLot: 5108707)							
ES2319132-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	93.4	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	86.8	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	94.5	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	94.2	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.4	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	78.8	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5106466)							
ES2318846-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	92.8	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	110	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	105	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	107	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	114	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	110	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5106466)							
ES2318846-004	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	120	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	110	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	110	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	122	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	114	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	108	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	114	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	120	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	105	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	110	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5106466)							
ES2318846-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	120	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	105	71.6	129
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	99.0	69.8	131
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	112	68.7	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%) Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5106466) - continued							
ES2318846-004	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	111	65.1	134
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	122	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	109	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5106466)							
ES2318846-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	114	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	104	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	99.2	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	117	69.2	143

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2319109**	Page	: 1 of 7
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Rachel Stuckey	Telephone	: +61-2-8784 8555
Project	: 12540460	Date Samples Received	: 08-Jun-2023
Site	: Hume FOGO and MRF Project Delivery	Issue Date	: 15-Jun-2023
Sampler	: Rachel Stuckey	No. of samples received	: 1
Order number	: 12540460	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	ES2319025--007	Anonymous	**Zinc**	7440-66-6	35.7 %	0% - 20%	**RPD exceeds LOR based limits**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC206	**05-Jun-2023**	----	----	----	**14-Jun-2023**	19-Jun-2023	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC206	**05-Jun-2023**	**14-Jun-2023**	02-Dec-2023	✓	**14-Jun-2023**	02-Dec-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC206	**05-Jun-2023**	**14-Jun-2023**	03-Jul-2023	✓	**15-Jun-2023**	03-Jul-2023	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) QC206	**05-Jun-2023**	**14-Jun-2023**	19-Jun-2023	✓	**14-Jun-2023**	24-Jul-2023	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) QC206	**05-Jun-2023**	**14-Jun-2023**	19-Jun-2023	✓	**14-Jun-2023**	24-Jul-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) QC206	**05-Jun-2023**	**14-Jun-2023**	19-Jun-2023	✓	**14-Jun-2023**	24-Jul-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC206	**05-Jun-2023**	**14-Jun-2023**	19-Jun-2023	✓	**15-Jun-2023**	24-Jul-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC206	**05-Jun-2023**	**13-Jun-2023**	19-Jun-2023	✓	**14-Jun-2023**	19-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP071) QC206	**05-Jun-2023**	**14-Jun-2023**	19-Jun-2023	✓	**15-Jun-2023**	24-Jul-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
QC206	**05-Jun-2023**	**13-Jun-2023**	19-Jun-2023	✓	**14-Jun-2023**	19-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP071)							
QC206	**05-Jun-2023**	**14-Jun-2023**	19-Jun-2023	✓	**15-Jun-2023**	24-Jul-2023	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
QC206	**05-Jun-2023**	**13-Jun-2023**	19-Jun-2023	✓	**14-Jun-2023**	19-Jun-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
QC206	**05-Jun-2023**	**14-Jun-2023**	02-Dec-2023	✓	**15-Jun-2023**	24-Jul-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
QC206	**05-Jun-2023**	**14-Jun-2023**	02-Dec-2023	✓	**15-Jun-2023**	24-Jul-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
QC206	**05-Jun-2023**	**14-Jun-2023**	02-Dec-2023	✓	**15-Jun-2023**	24-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
QC206	**05-Jun-2023**	**14-Jun-2023**	02-Dec-2023	✓	**15-Jun-2023**	24-Jul-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
QC206	**05-Jun-2023**	**14-Jun-2023**	02-Dec-2023	✓	**15-Jun-2023**	24-Jul-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	*Method*	*Matrix*	*Method Descriptions*
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☑ Sydney Laboratory — Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066 — 02 9900 8400 — EnviroSampleNSW@eurofins.com
☐ Brisbane Laboratory — Unit 1 21 Smallwood Place Murarrie QLD 4172 — 07 3902 4600 — EnviroSampleQLD@eurofins.com
☐ Perth Laboratory — Unit 2 91 Leach Highway Kewdale WA 6105 — 08 9251 9600 — EnviroSampleWA@eurofins.com
☐ Melbourne Laboratory — 6 Monterey Road Dandenong South VIC 3175 — 03 8564 5000 — EnviroSampleVic@eurofins.com

y	GHD	Project №	12540460
s	Level 7, 16 Marcus Clarke Street Canberra ACT 2601 Australia	Project Name	Hume FOGO and MRF Project Delivery
ame	Rachel Stuckey		
e	0435827593		
ctions			
Order	12540460		
№			

Project Manager	Rachel Stuckey
EDD Format (ESdat, EQuIS etc)	Esdat

Sampler(s)	Rachel Stuckey
Handed over by	Rachel Stuckey
Email for Invoice	Grant.Broacher@ghd.com
Email for Results	Rachel.stuckey@ghd.com

COPY

Environmental Division Sydney
Work Order Reference
ES2319109
Telephone : - 61-2-8784 8555

Analyses — Where metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attract SUITE pricing.

Containers — Change container type & size if necessary.

Required Turnaround Time (TAT) — Default will be 5 days if not ticked. ♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	B7: TRH, BTEXN, PAH, metals	B15: OCP, OPP, PCB	Semi-Vol CHC	PFAS Extended Suite - 30 PFAS	Asbestos identification in soil NEPM + WA guidelines	Rinsate	Trip Spikes							HOLD	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
06	5/6/23	S	X	X		X																	2		
206		S	X	X		X																	2		send to ALS please
3_0.05-0.2		S	X				X																2	1	
03-0.2-0.4		S	X	X	X																		2		
03_0.5-0.7		S	~~X~~													X							1		
301		W						X											1	1	2				rinsate
501		S							X																trip blank
502		S							X																
503		S							X																
504		S							X																

Zan. G 6/6/23

Time	
Temperature	11.0
Report №	995981

by: Dr. F. Symons Approved by: G. Jackson Approved on: 8 August 2013

Appendix F

Evaluation of QA/QC procedures

The Data Quality Indicators (DQIs) for sampling techniques and laboratory analysis of collected samples identify the acceptable level of error for this assessment. The DQIs adopted in this assessment comprise five components: precision, accuracy, representativeness, comparability and completeness.

A full review of all laboratory reports and sampling has been completed and is included as a data evaluation report for each laboratory batch. The outcomes are summarised in the following sections.

F-1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory field data and sampling techniques is assessed by calculating the relative percentage difference (RPD) of duplicate samples using the equation below where C_0 is the analyte concentration from the primary sample, and C_d is the analyte concentration from the secondary or duplicate sample.

$$RPD = \frac{|C_0 - C_d|}{\left(\frac{C_0 + C_d}{2}\right)} x\ 100$$

F-1-1 Duplicate samples

Relative percentage difference calculations are a quantitative measure of the accuracy of the analytical results. AS 4482.1 – 2005 (Standards Australia, 2005) typical RPDs are expected to range between 30% and 50%; however, this may be higher for concentrations which are close to the laboratory LOR, and in heterogenous media. Due to this the following RPD limits are adopted:

- ± 200% RPD for field duplicates and inter-laboratory duplicates for any analyte concentration between one and ten times the laboratory limit of reporting (LOR).
- ± 30% RPD for field duplicates and inter-laboratory duplicates for non-organic analyte concentrations greater than ten times the limit of reporting
- ± 50% RPD for field duplicates and inter-laboratory duplicates for organic analyte concentrations greater than ten times the limit of reporting

GHD notes that there is likely to be a degree of heterogeneity within the material. This heterogeneity is expected to be reflected in the RPD. Additionally, two inter-lab samples were lost in transit and could not be used for analysis.

Table F.1 Summary of analysed field duplicates

Location type	Sample count		
	Primary samples analysed	Intra-lab samples analysed	Inter-lab samples analysed.
Soil	39	4	1
Stockpile	14	2	0

Duplicate samples are required to be completed at a rate of 1:20 (5%) for both inter-lab and intra-lab duplicates giving a combined rate of 1:10 (10%).

For 53 primary soil samples, one intra-lab duplicates and six inter-lab duplicates were analysed. This gives an individual rates of 2.6% and 10.3% respectively, with a combined rate of 12.9%. Inter-lab duplicates were below the NEPM requirements how the combined rate requirements in the NEPM.

The RPD results are presented in Table 8.1 below. The concentrations in duplicate samples reported were both greater than and less than the concentrations for the primary data set, indicating that no systemic bias to either higher results potentially leading to false detections or false exceedances of criteria (a positive bias) or to lower results potentially leading to false non-detects or false compliance with criteria (a negative bias). It is considered that the RPD exceedances can generally be attributed to heterogeneity of material across the site and are not considered to affect the chemical classification of the material.

Table 8.1 Table F.2 Discussion of RPD exceedances

Primary sample ID	Duplicate sample ID	Duplicate type	Analyte	RPD	Discussion
TP17_0.3-0.4	QC101	Intra-lab	Zinc	43%	**Zinc** reported a primary concentration in this duplicate pair of 8.4 mg/kg, with a duplicate concentration of 13 mg/kg. The RPD in this instance likely reflects the heterogeneity of the soil matrix. Therefore, this RPD is not considered to affect the chemical classification of the material.
TP20_0.4-0.5	QC102	Intra-lab	Zinc F4 Fractions (TRH) C29-C36 Fractions (TRH)	173% 57% 67%	**Zinc** reported a primary concentration in this duplicate pair of 14 mg/kg, with a duplicate concentration of 190 mg/kg. The RPD likely reflects the heterogeneity of the soil matrix. Therefore, this RPD is not considered to affect interpretation of risk associated with the material. **TRH** for these fractions was less than the human health and ecological criteria in both samples in the duplicate pair. Therefore, this RPD is not considered to affect interpretation of risk associated with the material.
SP01_06	QC103	Intra-lab	F3 Fractions F4 Fractions C15-C28 Fractions C29-C36 Fractions	95% 122% 89% 135%	**TRH** for these fractions was less than the human health and ecological criteria in both samples in the duplicate pair. Therefore, this RPD is not considered to affect interpretation of risk associated with the material.
HA02_0.4-0.6	QC105	Intra-lab	Arsenic Chromium Lead Zinc	46% 45% 75% 47%	**For all metals** reported the RPD likely reflects the heterogeneity of the soil matrix. Therefore, this RPD is not considered to affect interpretation of risk associated with the material.
HA04_0.3-0.6	QC106	Intra-lab	Chromium	35%	**For all metals** reported the RPD likely reflects the heterogeneity of the soil matrix. Therefore, this RPD is not considered to affect interpretation of risk associated with the material.
	QC206	Inter-lab	Chromium Zinc	35% 33%	

The full RPD table is presented below.

Appendix F
Table F-1
Calculated Relative Percentage Difference (RPD) for Field Duplicate Samples

		Lab Report Number	981966	981966		981966	981966		981966	981966		981966	981966		995981	995981		995981	995981		995981	ES2319109	
		Field ID	TP17 0.3-0.4	QC101	**RPD**	TP20 0.4-0.5	QC102	**RPD**	SP01-06	QC103	**RPD**	SP02-02	QC104	**RPD**	HA02_0.4-0.6	QC105	**RPD**	HA04_0.3-0.6	QC106	**RPD**	HA04_0.3-0.6	QC206	**RPD**
		Sample Type	Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Interlab_D	
		Matrix Type	Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
		Sampled Date	17-04-23	17-04-23		17-04-23	17-04-23		18-04-23	18-04-23		18-04-23	18-04-23		05-06-23	05-06-23		05-06-23	05-06-23		05-06-23	05-06-23	
Chem Name		**Units**	**EQL**																						
Metals																									
	Arsenic	mg/kg	2 : 5 (Interlab)	5.1	4	24	7.3	6.8	7	2.9	3.6	22	**5.8**	**4.2**	**32**	**4.4**	**7**	**46**	3.7	3.7	0	3.7	<5	0
	Cadmium	mg/kg	0.4 : 1 (Interlab)	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<1	0
	Chromium (III+VI)	mg/kg	5 : 2 (Interlab)	6	7.5	22	13	13	0	**11**	**15**	**31**	13	10	26	**8.9**	**14**	**45**	**7.1**	<5	**35**	**7.1**	**5**	**35**
	Copper	mg/kg	5	<5	<5	0	**6.7**	**30**	**127**	5.7	5.1	11	6.6	5.3	22	<5	5.8	15	<5	<5	0	<5	<5	0
	Lead	mg/kg	5	16	17	6	**17**	**120**	**150**	22	19	15	18	22	20	**9.5**	**21**	**75**	7	6.5	7	7	9	25
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 : 2 (Interlab)	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0	<5	<5	0	<5	2	0
	Zinc	mg/kg	5	**8.4**	**13**	**43**	**14**	**190**	**173**	30	24	22	21	17	21	**6.8**	**11**	**47**	<5	<5	0	**<5**	**7**	**33**
BTEXN																									
	Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.2	0
	Toluene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0
	Ethylbenzene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0
	Xylene (o)	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0
	Xylene (m & p)	mg/kg	0.2 : 0.5 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.5	0
	Xylene Total	mg/kg	0.3 : 0.5 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.3	0	<0.3	<0.5	0
	Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
TRH - NEPM 2013																									
	F1 (C6-C10 minus BTEX)	mg/kg	20 : 10 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<10	0
	C6-C10 Fraction	mg/kg	20 : 10 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<10	0
	F2 (>C10-C16 minus Naphthalene)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
	>C10-C16 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
	F3 (>C16-C34 Fraction)	mg/kg	100	<100	<100	0	<100	<100	0	**280**	**<100**	**95**	110	<100	10	<100	<100	0	<100	<100	0	<100	<100	0
	F4 (>C34-C40 Fraction)	mg/kg	100	<100	<100	0	**180**	**<100**	**57**	**410**	**<100**	**122**	140	110	24	<100	<100	0	<100	<100	0	<100	<100	0
	>C10-C40 (Sum of Total)	mg/kg	100 : 50 (Interlab)	<100	<100	0	**180**	**<100**	**57**	**690**	**<100**	**149**	**250**	**110**	**78**	<100	<100	0	<100	<100	0	<100	<50	0
TRH - NEPM 1999																									
	C6-C9 Fraction	mg/kg	20 : 10 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<10	0
	C10-C14 Fraction	mg/kg	20 : 50 (Interlab)	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<50	0
	C15-C28 Fraction	mg/kg	50 : 100 (Interlab)	<50	<50	0	<50	<50	0	**130**	**<50**	**89**	<50	<50	0	<50	<50	0	<50	<50	0	<50	<100	0
	C29-C36 Fraction	mg/kg	50 : 100 (Interlab)	<50	<50	0	**100**	**<50**	**67**	**260**	**<50**	**135**	100	80	22	<50	<50	0	<50	<50	0	<50	<100	0
	C10-C36 (Sum of Total)	mg/kg	50	<50	<50	0	**100**	**<50**	**67**	**390**	**<50**	**155**	100	80	22	<50	<50	0	<50	<50	0	<50	<50	0
PAHs - standard 16																									
	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo[b+j]fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	PAHs (Sum of total) - Lab calc	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
	Total 8 PAHs (as BaP TEQ) (half LOR) - Lab Calc	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0	0.6	0.6	0
	Total 8 PAHs (as BaP TEQ)(full LOR) - Lab Calc	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0	1.2	1.2	0

Appendix F
Table F-1
Calculated Relative Percentage Difference (RPD) for Field Duplicate Samples

			Lab Report Number	981966	981966		981966	981966		981966	981966		981966	981966		995981	995981		995981	995981		995981	ES2319109	
			Field ID	TP17 0.3-0.4	QC101	RPD	TP20 0.4-0.5	QC102	RPD	SP01-06	QC103	RPD	SP02-02	QC104	RPD	HA02_0.4-0.6	QC105	RPD	HA04_0.3-0.6	QC106	RPD	HA04_0.3-0.6	QC206	RPD
			Sample Type	Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Interlab_D	
			Matrix Type	Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
			Sampled Date	17-04-23	17-04-23		17-04-23	17-04-23		18-04-23	18-04-23		18-04-23	18-04-23		05-06-23	05-06-23		05-06-23	05-06-23		05-06-23	05-06-23	
	Chem Name	**Units**	**EQL**																					
OC Pesticides																								
	Organochlorine pesticides EPAVic	mg/kg	0.1	<0.1	<1	0	<0.1	<0.1	0	<0.1	<0.1	0	<1	<1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1		
	Other organochlorine pesticides EPAVic	mg/kg	0.1	<0.1	<1	0	<0.1	<0.1	0	<0.1	<0.1	0	<1	<1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1		
	4,4'-DDE	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Aldrin	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	b-BHC	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Chlordane	mg/kg	0.1 : 0.05 (Interlab)	<0.1	<1	0	<0.1	<0.1	0	<0.1	<0.1	0	<1	<1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.05	0
	d-BHC	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	4,4 DDD	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	4,4 DDT	mg/kg	0.05 : 0.2 (Interlab)	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0
	DDT+DDE+DDD - Lab Calc	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Dieldrin	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfan I (alpha)	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfan II (beta)	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endosulfan Sulfate	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Endrin ketone	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
	Hexachlorobenzene	µg/kg	500	<500	<500	0	<500	<500	0															
	Hexachlorobenzene	µg/kg	50	<50	<500	0	<50	<50	0	<50	<50	0	<500	<500	0	<50	<50	0	<50	<50	0	<50	<50	0
	Methoxychlor	mg/kg	0.05 : 0.2 (Interlab)	<0.05	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.5	<0.5	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.2	0
	Toxaphene	mg/kg	0.5	<0.5	<10	0	<0.5	<0.5	0	<0.5	<0.5	0	<10	<10	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5		
OP Pesticides																								
	Tokuthion	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Azinphos methyl	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Bolstar (Sulprofos)	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Chlorfenvinphos	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Chlorpyrifos	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Coumaphos	mg/kg	2	<2	<5	0	<2	<2	0	<2	<2	0	<5	<5	0	<2	<2	0	<2	<2	0	<2		
	Demeton-O	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Demeton-S	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Diazinon	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Dichlorvos	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Dimethoate	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Disulfoton	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	EPN	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Ethion	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Ethoprop	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Fenitrothion	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Fensulfothion	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Fenthion	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Malathion	mg/kg	0.2 : 0.05 (Interlab)	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.05	0
	Merphos	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Methyl parathion	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
	Mevinphos (Phosdrin)	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Monocrotophos	mg/kg	2 : 0.2 (Interlab)	<2	<5	0	<2	<2	0	<2	<2	0	<5	<5	0	<2	<2	0	<2	<2	0	<2	<0.2	0
	Naled (Dibrom)	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Omethoate	mg/kg	2	<2	<5	0	<2	<2	0	<2	<2	0	<5	<5	0	<2	<2	0	<2	<2	0	<2		
	Parathion	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
	Phorate	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Pirimiphos-methyl	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Pyrazophos	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Ronnel	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Terbufos	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Trichloronate	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
	Tetrachlorvinphos	mg/kg	0.2	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.5	<0.5	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2		
Chlorinated Hydrocarbons																								
	1,2,4-trichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0															
	1,2-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0															
	1,4-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0															
	Benzal Chloride	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0															
	Benzotrichloride	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0															
	Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0															

Appendix F
Table F-1
Calculated Relative Percentage Difference (RPD) for Field Duplicate Samples

		Lab Report Number	981966	981966		981966	981966		981966	981966		981966	981966		995981	995981		995981	995981		995981	ES2319109	
		Field ID	TP17 0.3-0.4	QC101	**RPD**	TP20 0.4-0.5	QC102	**RPD**	SP01-06	QC103	**RPD**	SP02-02	QC104	**RPD**	HA02_0.4-0.6	QC105	**RPD**	HA04_0.3-0.6	QC106	**RPD**	HA04_0.3-0.6	QC206	**RPD**
		Sample Type	Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Field_D		Normal	Interlab_D	
		Matrix Type	Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil		Soil	Soil	
		Sampled Date	17-04-23	17-04-23		17-04-23	17-04-23		18-04-23	18-04-23		18-04-23	18-04-23		05-06-23	05-06-23		05-06-23	05-06-23		05-06-23	05-06-23	
Chem Name		**Units**	**EQL**																						
PCBs																									
	Arochlor 1016	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	Arochlor 1221	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	Arochlor 1232	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	Arochlor 1242	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	Arochlor 1248	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	Arochlor 1254	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	Arochlor 1260	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100		
	PCBs (Total)	µg/kg	100	<100	<1000	0	<100	<100	0	<100	<100	0	<1000	<1000	0	<100	<100	0	<100	<100	0	<100	<100	0
SVOCs																									
	1,2,3,4-tetrachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	1,2,3,5-Tetrachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	1,2,4,5-tetrachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	1,3,5-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	Benzyl chloride	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	Hexachlorocyclopentadiene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	Hexachloroethane	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	Pentachlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
VOCs																									
	1,2,3-trichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
	1,3-dichlorobenzene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0																
PFAS - Perfluoroalkyl Sulfonic Acids																									
	Perfluoropropanesulfonic acid (PFPrS)	mg/kg	0.005							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005		
	Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorooctane sulfonic acid (PFOS)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorononane sulfonate (PFNS)	mg/kg	0.005							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005		
	Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
PFAS - Perfluoroalkyl Carboxylic Acids																									
	Perfluorobutanoic acid (PFBA)	mg/kg	0.005 : 0.001 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.001	0
	Perfluoropentanoic acid (PFPeA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorohexanoic acid (PFHxA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluoroheptanoic acid (PFHpA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorooctanoic acid (PFOA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorononanoic acid (PFNA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorodecanoic acid (PFDA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorododecanoic acid (PFDoDA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
PFAS - Perfluoroalkyl Sulfonamide																									
	Perfluorooctane sulfonamide (FOSA)	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	mg/kg	0.01 : 0.0002 (Interlab)							<0.01	<0.01	0				<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.0002	0
	N-Methyl perfluorooctane sulfonamidoethanol (MEFOSE)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	mg/kg	0.01 : 0.0002 (Interlab)							<0.01	<0.01	0				<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.0002	0
PFAS - Fluorotelomer Sulfonic Acids																									
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
	6:2 Fluorotelomer Sulfonate (6:2 FTS)	mg/kg	0.01 : 0.0005 (Interlab)							<0.01	<0.01	0				<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.0005	0
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.005 : 0.0005 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0005	0
PFAS - Sums																									
	Sum of PFHxS and PFOS	mg/kg	0.005 : 0.0002 (Interlab)							<0.005	<0.005	0				<0.005	<0.005	0	<0.005	<0.005	0	<0.005	<0.0002	0
	PFAS (Sum of Total)	mg/kg	0.05 : 0.0002 (Interlab)							<0.05	<0.05	0				<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.0002	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
Bold indicates high RPDs (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

F-1-2 Transport spike

Transport spike samples are used to estimate the potential for volatile contamination to be lost during storage and transportation of samples. Trip spikes were included for soil samples.

All trip spike recoveries were within the acceptable RPD range of 70-130%. As such, it is generally considered that unacceptable losses of volatile contamination during storage and transport of samples is unlikely to have occurred.

1-1-1 Transport blank

Transport blank samples are used to estimate the potential for contamination to be introduced during the transport and storage of samples from issuing the sample containers from the laboratory, during sampling, through to the time of analysis.

All blank samples reported all analytes below the LOR, indicating that it is unlikely that cross-contamination between samples occurred during the storage and transport of samples.

F-2 Accuracy

1-1-2 Matrix spike

Matrix spike sample analysis is the analysis of one or more replicate portions of samples from the batch, after fortifying the additional portion(s) with known quantities of the analyte(s) of interest. The percentage recovery of target analyte(s) from matrix spike samples is used to determine the bias of the method in the specific sample matrix. Recoveries should lie between 30% and 150%.

Matrix spikes were all within the recovery limits.

1-1-3 Rinsate blanks

Rinsate blank samples are used to estimate the amount of cross-contamination potentially introduced during the re-use of sampling equipment.

The following sample collection methods were used to minimize cross contamination:

- Test pits – samples were taken from soil which had not been in contact with the sides of the excavator bucket to avoid cross-contamination.
- Hand auger – hand auger was cleaned with phosphate and PFAS free detergent and potable water between uses and rinsed with laboratory supplied deionized water.

The methodologies listed above were designed to prevent cross-contamination and new disposable nitrile gloves were worn for collection of each sample.

Rinsate blank did not record any detections as shown below.

Appendix F
Table F-2
Trip Blank Results

			Lab Report Number	995981	
			Field ID	QC502	QC503 (blank)
			Sample Date	05-Jun-23	05-Jun-23
			Sample Type	Trip_B	Trip_B
Chem Group	**Chem Name**	**Unit**	**EQL**		
BTEXN	Benzene	mg/kg	0.1	<0.1	<0.1
	Toluene	mg/kg	0.1	<0.1	<0.1
	Ethylbenzene	mg/kg	0.1	<0.1	<0.1
	Xylene (o)	mg/kg	0.1	<0.1	<0.1
	Xylene (m & p)	mg/kg	0.2	<0.2	<0.2
	Xylene Total	mg/kg	0.3	<0.3	<0.3
TRH - NEPM 2013	F1 (C6-C10 minus BTEX)	mg/kg	20	<20	<20
	C6-C10 Fraction	mg/kg	20	<20	<20
TRH - NEPM 1999	C6-C9 Fraction	mg/kg	20	<20	<20

Appendix F
Table F-3
Rinsate Results

Lab Report Number	995981
Field ID	QC301
Sample Date	05-06-23
Sample Type	Rinsate

ChemName	Units	EQL	
BTEXN			
Benzene	µg/L	1	<1
Toluene	µg/L	1	<1
Ethylbenzene	µg/L	1	<1
Xylene (o)	µg/L	1	<1
Xylene (m & p)	µg/L	2	<2
Xylene Total	µg/L	3	<3
Naphthalene	µg/L	1	<1
Metals			
Arsenic	mg/L	0.001	<0.001
Cadmium	mg/L	0.0002	<0.0002
Chromium (III+VI)	mg/L	0.001	<0.001
Copper	mg/L	0.001	<0.001
Lead	mg/L	0.001	<0.001
Mercury	mg/L	0.0001	<0.0001
Nickel	mg/L	0.001	<0.001
Zinc	mg/L	0.005	<0.005
OC Pesticides			
Organochlorine pesticides EPAVic	µg/L	2	<2
Other organochlorine pesticides EPAVic	µg/L	2	<2
4,4'-DDE	µg/L	0.2	<0.2
a-BHC	µg/L	0.2	<0.2
Aldrin	µg/L	0.2	<0.2
Aldrin + Dieldrin	µg/L	0.2	<0.2
b-BHC	µg/L	0.2	<0.2
Chlordane	µg/L	2	<2
d-BHC	µg/L	0.2	<0.2
4,4 DDD	µg/L	0.2	<0.2
4,4 DDT	µg/L	0.2	<0.2
DDT+DDE+DDD - Lab Calc	µg/L	0.2	<0.2
Dieldrin	µg/L	0.2	<0.2
Endosulfan I (alpha)	µg/L	0.2	<0.2
Endosulfan II (beta)	µg/L	0.2	<0.2
Endosulfan Sulfate	µg/L	0.2	<0.2
Endrin	µg/L	0.2	<0.2
Endrin aldehyde	µg/L	0.2	<0.2
Endrin ketone	µg/L	0.2	<0.2
g-BHC (Lindane)	µg/L	0.2	<0.2
Heptachlor	µg/L	0.2	<0.2
Heptachlor epoxide	µg/L	0.2	<0.2
Hexachlorobenzene	µg/L	0.2	<0.2
Methoxychlor	µg/L	0.2	<0.2
Toxaphene	µg/L	5	<5
OP Pesticides			
Tokuthion	µg/L	2	<2
Azinphos methyl	µg/L	2	<2
Bolstar (Sulprofos)	µg/L	2	<2
Chlorfenvinphos	µg/L	20	<20
Chlorpyrifos	µg/L	2	<2
Chlorpyrifos-methyl	µg/L	2	<2
Coumaphos	µg/L	20	<20
Demeton-O	µg/L	2	<2
Demeton-S	µg/L	2	<2
Diazinon	µg/L	2	<2
Dichlorvos	µg/L	2	<2
Dimethoate	µg/L	2	<2
Disulfoton	µg/L	2	<2
EPN	µg/L	2	<2
Ethion	µg/L	2	<2
Ethoprop	µg/L	2	<2
Fenitrothion	µg/L	2	<2
Fensulfothion	µg/L	2	<2
Fenthion	µg/L	2	<2
Malathion	µg/L	2	<2
Merphos	µg/L	2	<2
Methyl parathion	µg/L	2	<2
Mevinphos (Phosdrin)	µg/L	2	<2
Monocrotophos	µg/L	2	<2
Naled (Dibrom)	µg/L	2	<2
Omethoate	µg/L	20	<20
Parathion	µg/L	2	<2
Phorate	µg/L	2	<2
Pirimiphos-methyl	µg/L	20	<20
Pyrazophos	µg/L	2	<2
Ronnel	µg/L	2	<2
Terbufos	µg/L	2	<2
Trichloronate	µg/L	2	<2
Tetrachlorvinphos	µg/L	2	<2

Appendix F
Table F-3
Rinsate Results

Lab Report Number	995981
Field ID	QC301
Sample Date	05-06-23
Sample Type	Rinsate

ChemName	Units	EQL	
PAHs - standard 16			
Acenaphthene	µg/L	1	<1
Acenaphthylene	µg/L	1	<1
Anthracene	µg/L	1	<1
Benz(a)anthracene	µg/L	1	<1
Benzo(a)pyrene	µg/L	1	<1
Benzo[b+j]fluoranthene	µg/L	1	<1
Benzo(k)fluoranthene	µg/L	1	<1
Benzo(g,h,i)perylene	µg/L	1	<1
Chrysene	µg/L	1	<1
Dibenz(a,h)anthracene	µg/L	1	<1
Fluoranthene	µg/L	1	<1
Fluorene	µg/L	1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1
Phenanthrene	µg/L	1	<1
Pyrene	µg/L	1	<1
PAHs (Sum of total) - Lab calc	µg/L	1	<1
PCBs			
Arochlor 1016	µg/L	5	<5
Arochlor 1221	µg/L	5	<5
Arochlor 1232	µg/L	5	<5
Arochlor 1242	µg/L	5	<5
Arochlor 1248	µg/L	5	<5
Arochlor 1254	µg/L	5	<5
Arochlor 1260	µg/L	5	<5
PCBs (Total)	µg/L	5	<5
TRH - NEPM 1999			
C6-C9 Fraction	µg/L	20	<20
C10-C14 Fraction	µg/L	50	<50
C15-C28 Fraction	µg/L	100	<100
C29-C36 Fraction	µg/L	100	<100
C10-C36 (Sum of Total)	µg/L	100	<100
TRH - NEPM 2013			
F1 (C6-C10 minus BTEX)	µg/L	20	<20
C6-C10 Fraction	µg/L	20	<20
F2 (>C10-C16 minus Naphthalene)	µg/L	50	<50
>C10-C16 Fraction	µg/L	50	<50
F3 (>C16-C34 Fraction)	µg/L	100	<100
F4 (>C34-C40 Fraction)	µg/L	100	<100
>C10-C40 (Sum of Total)	µg/L	100	<100

Appendix F
Table F-4
Trip Spike Results

Lab Report Number	995981
Field ID	QC501
Sample Date	05-Jun-23
Sample Type	Trip_S

Chem Group	Chem Name	Unit	
BTEXN	Benzene	%	92
	Toluene	%	93
	Ethylbenzene	%	87
	Xylene (o)	%	88
	Xylene (m & p)	%	90
	Xylene Total	%	89
TRH - NEPM 2013	C6-C10 Fraction	%	91
TRH - NEPM 1999	C6-C9 Fraction	%	91

*Acceptable Trip Spike Recoveries are 70 - 130%.

F-3 Representativeness

F-3-1 Appropriate sampling

Sample jars for soil samples were provided from the laboratory and were of an appropriate size and material for the required analysis.

F-3-2 Holding times

Holding times for each batch are discussed in the relevant a data validation reports for each laboratory batch.

A number of soil samples were submitted and the analytes extracted out of holding times, see Appendix E. This is not expected to affect results given the COPC are largely non-volatile.

F-3-3 Limits of reporting

Limits of reporting were equal to or below the assessment criterion for all analytes.

F-4 Comparability

Comparability expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples, ensuring analysing laboratories use consistent analysis techniques and reporting methods.

Sampling was conducted following consistent methods and with reference to the procedures in the GHD standard operating procedures.

Laboratory analysis was undertaken by NATA accredited laboratories for both primary and secondary analysis and samples.

F-5 Completeness

Sample descriptions as provided in the test pit and hand auger logs are complete and appropriate.

The chain of custody documentation and procedure was completed but was not followed for two inter-lab samples that were sent between NATA accredited laboratories.

ghd.com

The Power of Commitment