



Douglas Partners

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Report on
Supplementary Contamination Investigation

Proposed Tourist and Hotel Development
231 Pacific Highway, Mount White

Prepared for
The Trustee for Mount White Trust

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Integrated Practical Solutions



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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

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Table of Contents

	Page
1. Introduction.....	1
2. Proposed Development.....	1
3. Background	2
4. Scope of Work.....	3
5. Site Information	4
6. Environmental Setting	5
7. Site Walkover	6
8. Preliminary Conceptual Site Model	8
9. Sampling and Analysis Quality Plan	10
9.1 Data Quality Objectives	10
9.2 Soil Sampling Rationale.....	10
9.3 Analytical Rationale	11
10. Site Assessment Criteria.....	12
11. Results	12
11.1 Field Work Results.....	12
11.2 Field and Analytical Results.....	15
12. Discussion	19
13. Conclusions and Recommendations	23
14. References	23
15. Limitations	24
 Appendix A:	
About this Report	
Drawing 1	
Drawing 2	
Drawing 3	
Client-Supplied Plans	
Appendix B:	
Table B1: Summary of Laboratory Results (DP, 2021)	
Table B2: Summary of Laboratory Results	
Table B3: Summary of Gravimetric Screening – Field and Analytical Results	

Appendix C:	Previous DP (2021) Logs
	Test Pit Logs
	Sampling Methodology
	Soil Descriptions
	Symbols and Abbreviations
Appendix D:	Site Assessment Criteria
Appendix E:	Field Work Methodology
Appendix F:	Data Quality Objectives
Appendix G:	Quality Assurance / Quality Control
Appendix H:	Laboratory Certificates of Analysis and Chain-of-Custody Documentation

Report on Supplementary Contamination Investigation Proposed Tourist and Hotel Development 231 Pacific Highway, Mount White

1. Introduction

Douglas Partners Pty Ltd (DP) was engaged by The Trustee for Mount White Trust to complete this supplementary contamination investigation (SCI) for a proposed tourist and hotel development at 231 Pacific Highway, Mount White (the site as shown on Drawing 1, Appendix A). The investigation was undertaken with reference to DP's proposal 202936.02.P.001.Rev0 dated 17 February 2022.

DP has previously prepared a detailed site investigation for contamination (DSI – DP, 2021) for the site which recommended further investigation / delineation within part of a potential area of environmental concern (PAEC) 1 (see Section 3 below). The objective of the current investigation is therefore to delineate the extent of contamination at the locations identified in DSI (i.e. Bores 128, 129 and 131 as identified on Drawing 1, Appendix A), and to comment on the need for further investigation and/or management with regard to the proposed development.

It should be noted that in the DSI, laboratory results were assessed against a general commercial land use site assessment criteria (SAC). However, in the current SCI, the SAC has been revised. A summary of the DSI results, assessed against the updated SAC has also been included in the current report, along with a discussion of the results in the context of the current development plans.

It is understood that the report will be used to support a planning proposal for the proposed development. This report must be read in conjunction with all appendices including the notes provided in Appendix A.

The following key guidelines were consulted in the preparation of this report:

- NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* [NEPM] (NEPC, 2013); and
- NSW EPA *Guidelines for Consultants Reporting on Contaminated Land* (NSW EPA, 2020).

2. Proposed Development

Based on concept plans, it is understood that the proposed tourist and hotel development will include the construction of a two-storey building and multiple single storey buildings, with associated structures / features including a reflection pond, swimming pool, access driveway, an on-grade carpark and landscaped / open space areas. A subfloor cellar and storage area under the main building has also been proposed.

At the time of preparing this report, the extent of earthworks proposed at the site was not known, however, it has been assumed that finished levels would be close to the existing surface levels. The proposed development plans are included in Appendix A.

3. Background

DP has previously prepared a DSI for the site, which involved a site history review, completion of a ground penetration radar scan, intrusive works along with soil and groundwater screening and laboratory testing. The intrusive investigation works comprised the drilling and sampling from forty-five boreholes (Bores 101 to 107 and Bores 110 to 147), collection of two sediment grab samples (Bores 108 and 109) from the on-site creek and; installation and sampling of three groundwater monitoring wells.

The boreholes were positioned across accessible areas of the site to provide overall site coverage, and also to target the identified PAEC as summarised in Table 1 below. The borehole locations are shown on Drawing 1, in Appendix A.

Table 1: Summary of Targeted Sampling Locations (DP, 2021)

Location Target	Identified From	Borehole ID
Intermittent tributary / creek (targeting potential contamination from off-site sources)	Site walkover	Bores 108 and 109
PAEC 1 (former agricultural / orchard land use / area of former ground disturbance / former building footprint)	1961 and 1991 historical aerial and site walkover	Bores 125 to 139
PAEC 2 (former re-fuelling area)	1961 historical aerial	Bores 140, 142, 144 to 145 and 146

Reference should be made to Section 11.2 of this report for a summary of the DSI laboratory results assessed against the current revised SAC (i.e. residential land use). A summary of the contaminant exceedances, based on a commercial land use SAC as reported in DP (2021), and relevant to the current delineation scope of works is presented below.

PAEC 1 (DP, 2021)

- Concentrations of PAH and/or TRH exceeded the health-based SAC in samples 128/0.1 and 129/0.65; and
- Asbestos was detected in sample 131/0.1. Given that asbestos was detected in fibre cement material > 7 mm, the result was considered to be an exceedance of the health-based SAC.

DP noted the exceedances of the health-based SAC were in the general locality of the ground disturbance / possible filling activities observed in the 1991 historical aerial photo. Based on the field and laboratory results, further investigation was considered to be warranted in the locality of Bores 128, 129 and 131 to further characterise and delineate the extent of soil contamination.

4. Scope of Work

DP carried out the following scope of works:

- Review of the DSI (DP, 2021) and re-assessment of the DSI laboratory results against the revised SAC (see Section 11.2);
- A site walkover and a grid-spaced walkover of the delineation area to observe the current site conditions and assess the potential for contaminating activities;
- Excavation of forty test pits using a 5-tonne excavator terminating in natural soils in the following areas:
 - o Twenty test pits (201 to 220) within the asbestos delineation area (i.e. in the vicinity of Bore 131);
 - o Twenty test pits (221 to 240) within the PAH / TRH delineation area (i.e. in the vicinity of Bores 128 and 129);
- Collection of soil samples from regular depth intervals based on field observations;
- Collection of a 10 L and 500 ml soil sample from each fill stratum from the asbestos delineation area;
- Screening of each 10 L soil sample using a ≤ 7 mm sieve for fragments of potential asbestos containing material with reference to DOH (2021);
- Laboratory analysis of selected soil samples for the contaminants of concern as identified in the conceptual site model (CSM - refer to Section 8), and additional parameters (i.e. pH, cation exchange capacity, total organic carbon, phenols, coal tar and leachability);
- Field sampling and laboratory analysis according to standard environmental protocols, including a Quality Assurance / Quality Control (QA/QC) plan, appropriate Chain of Custody procedures and in-house laboratory QA/QC testing; and
- Preparation of this report detailing the findings of the investigation including recommendations for further works.

5. Site Information

The key site information is presented below, and the site boundary is shown in Figure 1.

Site Address	231 Pacific Highway, Mount White
Legal Description	Lot 1, Deposited Plan 207158
Area	3.5 hectares (ha)
Zoning	RU1 Primary Production
Local Council Area	Central Coast Council
Current Use	Vacant land
Surrounding Uses	<ul style="list-style-type: none"> • North – Vacant land / rural residential land use; • East – Ashbrookes Road, and nursery (Mount White Nursery and Princeton Wholesale Nurseries) and restaurant (Saddles) beyond; • South – Pacific Highway and bushland beyond; and • West – Calverts Creek and rural residential land use / vacant land further west.



Figure 1: Site Location

6. Environmental Setting

Regional Topography	Gently undulating to rolling rises on Hawkesbury Sandstone plateau, with local relief to 40 m and slopes <15%.
Site Topography	The site lies at an elevation ranging from approximately 166 m to 175 m AHD, based on the survey plan (see Appendix A). Based on the site topography, the land slopes from the east / north east to the west / south west.
Soil Landscape	Reference to the <i>Gosford – Lake Macquarie 1:100,000 Soil Landscapes Sheet</i> indicates that the site is underlain by the Somersby (residual) soil landscape, characterised by deeply weathered Hawkesbury Sandstone plateau. These soils typically vary from yellow earths and earthy sands on crests and slopes, with grey earths in poorly drained areas, and leached sands and siliceous sands along drainage lines. These soils typically have localised permanent and seasonal waterlogging, moderate erosion hazard, very low soil fertility and are highly permeable.
Geology	Reference to the <i>Gosford-Lake Macquarie 1:100 000 Geology Sheet</i> indicates that the site is underlain by the Hawkesbury Sandstone of the Mesozoic era of the Triassic period characterised by quartz sandstone and minor shale lenses (grey siltstone, claystone and laminite).
Acid Sulfate Soils	Reference to published ASS risk maps indicates the site and areas within 500 m of the site are mapped as having no known occurrence of ASS material. Furthermore, given the site's elevation (>5 m AHD) and the mapped residual soil landscape, assessment of ASS was not considered to be warranted.
Surface Water	Calvert's creek is mapped along the western site boundary and a tributary of Calvert's creek (likely intermittent) intercepts the northern third of the site. Based on the site topography, surface water is anticipated to flow to the west / south west towards Calvert's Creek, and also to the south, within the northern third of the site, towards the tributary of Calvert's Creek, ultimately draining into Mooney Mooney Creek located approximately 2.6 km south east of the site.
Groundwater	<p>Based on the site topography, groundwater is anticipated to flow from the east / north east to the west / south west, towards Calvert's Creek.</p> <p>A search of the publicly available registered groundwater bore database on 25 November 2021 indicated that there were five registered groundwater bores within approximately 500 m of the site (refer to DP, 2021 for a summary of the registered groundwater bores).</p>

7. Site Walkover

A site walkover was undertaken by an environmental engineer from DP on 9 March 2022. The site conditions were observed to be generally similar to the conditions observed in September 2021 during the DSI field work (refer to Section 7 of DP (2021), however the site was over-grown since the completion of the DSI field work.

No fragments of asbestos containing material (ACM) were observed on the ground surface during the walkover. However, it should be noted that most of the site was covered in tall grass, and parts of the site were water-logged, therefore preventing adequate visual inspection of the soil surface in most areas. The general site topography was consistent with that described in Section 6, with the land generally sloping from the east / north east to the west / south west.

General site photographs of PAEC 1 taken as part of the current investigation are shown in Figures 2 to 5 below.



Figure 2: Test pit locations marked out using stakes within the asbestos delineation area. Photograph taken 9 March 2022.



Figure 3: PAH/TRH Delineation area. Photo facing north west. Photograph taken 9 March 2022.



Figure 4: Ground surface within the locality of Bore 128 (circled) drilled as part of the DSI Photograph taken 9 March 2022.



Figure 5: Close-up of ground surface within the locality of Bore 128 showing asphalt / road base material. Photograph taken 9 March 2022.

8. Preliminary Conceptual Site Model

A conceptual site model (CSM) is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM provides the framework for identifying how the site became contaminated and how potential receptors may be exposed to contamination either in the present or the future i.e.: it enables an assessment of the potential source – pathway – receptor linkages (complete pathways).

Potential Sources

A preliminary CSM based on the site history review and walkover was provided in the DSI, and a revised CSM based on the DSI findings, relevant to the current SCI is presented below. The following potential sources of contamination and associated contaminants of potential concern (COPC) have been identified.

- S1: Fill: Associated with site regrading, construction/demolition of former buildings, imported fill, and filling of the former tennis court.
 - o COPC include total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), and asbestos
- S2: Potential fuel leaks associated with the former machinery shed
 - o COPC include TRH, BTEX, PAH

Potential Receptors

The following potential human receptors have been identified:

- R1: Construction and maintenance workers;
- R2: End users [workers and guests]; and
- R3: Adjacent site users [mainly rural residential land use].

Given the site is currently vacant, current site users are not considered to be relevant.

The following potential environmental receptors have been identified:

- R4: Surface water [Calvert's Creek - freshwater];
- R5: Groundwater; and
- R6: Terrestrial ecosystems.

Potential Pathways

The following potential pathways in relation to human receptors have been identified:

- P1: Ingestion and dermal contact; and
- P2: Inhalation of fibres/dust and/or vapours.

The following potential pathways in relation to the environmental receptors have been identified:

- P3: Surface water run-off;
- P4: Lateral migration of groundwater providing base flow to water bodies;
- P5: Leaching of contaminants and vertical migration into groundwater; and
- P6: Inhalation, ingestion and absorption.

Summary of Potentially Complete Exposure Pathways

A 'source–pathway–receptor' approach has been used to assess the potential risks of harm being caused to human or environmental receptors from contamination sources on or in the vicinity of the site, via exposure pathways (potential complete pathways). The possible pathways between the above sources (S1 and S2) and receptors (R1 to R6) are provided in below Table 2.

Table 2: Summary of Potentially Complete Exposure Pathways within the delineation area

Source and COPC	Transport Pathway	Receptor	Risk Management Action Recommended
S1: Fill - TRH, BTEX, PAH and asbestos S2: Potential fuel leaks associated with the former machinery shed - TRH, BTEX, PAH	P1 – Ingestion and dermal contact	R1 – Construction and maintenance workers	An intrusive investigation of site soils and associated contamination sampling (with respect to the sampling density as per NSW EPA, 1995 and DOH (2021)) is recommended within part of PAEC 1 (i.e. in the locality of Bores 128, 129 and 131) to delineate the extent of contamination.
	P2 – Inhalation of fibres/ dust and/or vapours	R2 – End users	
	P2 – Inhalation of fibres/ dust and/or vapours	R3 – Adjacent site users	
	P3 – Surface water run-off	R4 – Surface water	A groundwater investigation may be recommended should the results of the soil sampling indicate significant contamination (relevant for TRH/BTEX and PAH only)
	P4 – Lateral migration of groundwater		
	P5 – Leaching of contaminants and vertical migration into groundwater	R5 – Groundwater	
	P6 – Inhalation, ingestion and absorption	R6 – Terrestrial ecosystems	

9. Sampling and Analysis Quality Plan

9.1 Data Quality Objectives

The SCI was devised with reference to the seven-step data quality objective process which is provided in Appendix B Schedule B2, NEPC (2013). The data quality objective process is outlined in Appendix F.

9.2 Soil Sampling Rationale

The current SCI targeted part of PAEC 1, with sampling locations positioned to delineate the PAH/TRH and asbestos contamination identified in the DSI. The sampling locations are shown on Drawing 2, Appendix A.

With reference to DOH (2021) and given that an ACM fragment was identified at Bore 131 (DP, 2021), a relatively small-spaced step-out and judgemental sampling rationale was completed to characterise and delineate the area impacted by ACM fragments. A summary of the sampling density adopted is presented in Table 3.

Based on the sub-surface conditions encountered in the DSI, the review of site history (DP, 2021), and the observations made during the current walkover, it was considered that the PAH/TRH exceedances could be associated with the asphalt / bitumen observed on the site surface within the mid-northern portion of PAEC 1 and / or the ground disturbance observed in the 1991 historical aerial.

Given the widespread distribution of asphalt, wider-spaced step-out sampling from the DSI hotspot locations (i.e. Bores 128 and 129) was considered to be appropriate. The delineation locations were positioned to target the identified asphalt materials (i.e. former tennis court area and locality of Bore 128). The sampling density completed was developed with respect to Table A of NSW EPA (1995) which recommends a minimum sampling density for site characterisation based on the detection of circular hot spots using a systemic grid sampling pattern.

Table 3: Summary of Targeted Sampling Locations

Test Pit ID	Location Target
201 to 220	Positioned to delineate the extent of asbestos contamination.
221 to 240	Positioned to delineate the extent of TRH/PAH contamination

Soil samples were collected from each test pit at depths of approximately 0.1 m and 0.5 m, and changes in lithology or signs of contamination. The general sampling methods are described in the field work methodology, included in Appendix E.

9.3 Analytical Rationale

Based on the site observations and the location of soil samples within the subsoil strata (see Section 11.1), selected samples were analysed for the primary contaminants of concern as identified in Section 8. The analytical scheme was designed to obtain an indication of the potential presence and possible distribution of identified COPC, as outlined below:

- Surface sample locations and / or samples collected at depth, based on field observations (i.e. fill inclusions / odours), from Pits 221 to 240 were analysed for TRH/BTEX and PAH;
- The underlying natural sample from select locations where a bituminous odour and/or asphalt were observed (i.e. samples 221/0.3, 222/0.3, 223/0.5, 236/0.35) were analysed for TRH/BTEX and PAH to assess for potential contamination impacts in the natural soils;
- Based on the initial laboratory results, four worst-case samples were analysed for the following analytes / parameters:

- o Toxicity characteristic leachate procedure (TCLP) and Australian Standard Leachate Procedure (ASLP) to assess the leachability of PAH through the sub-surface, and leachability under typical site conditions, respectively;
 - o Presence / absence of coal tar, to assess a potential coal tar contaminant source;
 - o Phenols as an additional line of evidence to assess a potential coal tar contaminant source; and
 - o pH, CEC and total organic carbon (TOC), for input into a human health risk based assessment, if required.
- For Pits 201 to 220, representative fragments of fibrous cement were analysed for the presence/absence of asbestos;
- At select locations where fill with fibrous cement was observed, the 500 ml sample was analysed for asbestos (FA and AF).

10. Site Assessment Criteria

The site assessment criteria (SAC) applied in the current investigation are informed by the CSM (Section 8) which identified human and environmental receptors to potential contamination on the site, as well as consideration of the proposed development. The laboratory analytical results have been assessed against the SAC comprising primarily the investigation and screening levels in Schedule B1 of NEPC (2013).

The investigation and screening levels applied in the current investigation comprise levels adopted for a generic Residential A land use scenario, with reference to Schedule B7 of NEPM, which states that a more sensitive land use criteria should be considered for hotel developments. The derivation of the SAC is included in Appendix D and the adopted SAC are listed on the summary analytical results tables in Appendix B.

11. Results

11.1 Field Work Results

The test pit logs for this SCI are included in Appendix C. A summary of the sub-surface profile is given below. It should be noted that the sub-surface conditions encountered during the DSI (DP, 2021) which are relevant to the current SCI have been incorporated into the below summary, and these logs have been included in Appendix C:

Asbestos Delineation Area (Pits 201 to 220)

- FILL - typically grey / brown gravelly silty sand or silty sand fill to depths of up to 0.8 m as summarised below:
 - o Gravelly silty sand fill was encountered in Pits 201, 203, 207, 208, 209 to 211, 213, and 216 to 219;
 - o Silty sand fill was encountered in Bore 131 (DP, 2021), Pits 204, 206, 212, 214, 215 and 220;
 - o Gravelly sand fill (predominately crushed oyster fragments) was encountered in Pit 212 from depths of 0.2 m to 0.4 m;
 - o The following inclusions were noted:
 - Fibrous cement in Pits 203, 211, 216, 219, with a layer of fibrous cement at 0.6m to 0.7 m; in Pits 203 and 219;
 - Trace charcoal and /or asphalt and / or slag in Pits 203, 208, 210, 211, 214, 215, 216, and 218;
 - Trace metal, glass, plastic, timber, and / or rubber in Bore 131, Pits 203, 206, 208, 209 to 211, 214, 215, 216; and 220;
 - Oyster shells were encountered in Pits 201, 203, 204, 206, 207, 208, 209, 210, 212 to 215, 217, 219, and 220. A band of oyster shells was observed at depths of 0.35 m to 0.6 m in Pit 204;
- Silty SAND / silty sandy CLAY - typically grey / brown as summarised below:
 - o Silty sand was encountered in Pit 202 and 205 from the surface to depths of up to 0.4 m, and in Pits 204, 206, 212, 215 underlying fill; and
 - o Silty sandy clay was encountered in Pits 201, 203, 207 to 211, 213, 214, 216, 218 to 220 underlying fill.



Figure 6: Fibrous cement material (circled) observed in a test pit excavated in the asbestos delineation area.

PAH delineation area

- FILL – typically grey / brown and / or black gravelly sand or gravel fill as summarised below:
 - o Gravelly sand was encountered in Bore 128 (DP, 2021), Pits 221 to 224, 229, 230, 233, and 235 to 240;
 - o Gravel or sandy gravel fill was encountered in Bores 127 and 129 (DP, 2021), and Pits 231, 232 and 234 to depths of up to 0.25 m;
 - o Gravelly clayey sand or clayey sand fill was encountered in Bore 129 from depths of 0.15 m to 0.6 m, Pit 130 from depths of 0 to 0.1 m (DP, 2021) and in Pit 233 from depths of 0.1 m to 0.3 m;
 - o Silty sand fill was encountered in Bores 126 and 133 (DP, 2021), Pits 226 to 228 to depths of up to 0.3 m; and gravelly silty sand was encountered in Bore 129 from depths of 0.6 m to 0.7 m;
 - o The following inclusions / odours were noted:
 - Asphalt and / or subangular igneous roadbase/basalt in Bores 127 to 129, 221, 222, 224, 229, 230, 231, 233, and 235 to 240;
 - A bituminous odour (most likely asphalt) was noted in Pit 221 from depths of 0.1 to 0.2 m, Pit 223 from the surface to 0.2 m; Pit 233 from 0.3 m to 0.4 m; and Pit 236 from 0.2 m to 0.3 m;
 - Oyster shells in Bores 127 to 130, 133, Pits 221, 222, 226, 227, 228, 231, 232, 234, and
 - Trace metal, plastic and concrete was encountered in Bore 126;
- SAND or CLAY – typically yellow brown clayey sand, grey/ brown silty sand or silty sandy clay as summarised below:
 - o Silty sand – encountered in Pit 225 from the ground surface to depths of 0.2 m, and in Bores 127 to 130 and 133 underlying fill;
 - o Clayey sand – encountered in Pits 221 to 226, 228 to 240, Bore 126 underlying fill or silty sand; and
 - o Silty sandy clay – encountered in Pit 227 underlying fill to test pit termination at 0.6 m.

No free groundwater was observed in Pits 232, 233, and 235 to 240. Seepage was encountered at the surface in the remaining pits. It should be noted that groundwater levels are affected by climatic conditions and soil permeability and will therefore vary with time.

The PID readings were generally < 1 ppm indicating a low potential for gross contamination from volatile contaminants to be present in the soil. It is noted that sample 236/0.25 and sample 238/0.05 had a PID reading of 8 ppm and 2.5 ppm, respectively.

11.2 Field and Analytical Results

A summary of the DSI laboratory results, assessed against the current SAC is presented in Table B1, Appendix B, and the field and laboratory results for the current investigation are summarised in Tables B2 and B3, Appendix B.

The laboratory certificates of analysis together with the chain of custody documentation are provided in Appendix H.

Reference should be made to Table 4 (Section 12) of this report for an overview of the results that exceeded the SAC which were considered to require further investigation / remediation. A summary of the laboratory results is presented below.

DP (2021) Results (re-assessed against an updated SAC)

- Concentrations of BTEX, OCP and OPP were below the PQL and SAC in all samples;
- The following results were obtained for metals:
 - o Concentrations of lead in sample 105/0.1 (390 mg/kg) exceeded the human health SAC of 300 mg/kg

Given the concentration of lead is less than 2.5 times the SAC, the 95% UCL was considered applicable to the dataset. The 95% UCL was calculated using USEPA ProUCL 5.1 and the output is included in Appendix B. Guidance provided in the ProUCL Version 5.1.002 Technical Guide (Section 1.2 - Site Data Sets) states the following:

A data set collected from a site population should be representative of the population under investigation. Depending upon the areas under investigation, different soil depths and soil types may be considered as representing different statistical populations. In such cases, background versus site comparisons may have to be conducted separately for each of those sub-populations (e.g., surface and sub-surface layers of an area of concern, clay and sandy site areas).... Specifically, the availability of an adequate amount of representative data is required from each of those site sub-populations/strata defined by sample depths, soil types, and other characteristics.

Based on the silty sand fill soil type encountered at Bore 105/0.1, and the bore location (i.e. within the northern portion of the site), the dataset comprised locations from the northern portion of the site where surface silty sand fill or silty sand topsoil was encountered. Given the silty sand fill encountered was assessed as being sourced from on-site, it was considered appropriate to include both fill and natural soils in the same dataset.

The calculated 95% upper confidence limit (UCL) of the arithmetic mean (95% UCL) was 120.5 mg/kg which is less than the human health SAC, and the standard deviation was less than 50% of the SAC. Therefore, the lead exceedance is not considered to warrant further investigation or management.

- o Concentrations of nickel exceeded the ecological SAC of 35 mg/kg in the following samples:
 - Sample 129/0.1 (73 mg/kg);
 - Sample 144/0.1 (49 mg/kg);
 - Sample 145/0.1 (44 mg/kg); and
 - Sample 146/0.1 (52 mg/kg)

DP notes that the laboratory triplicate of sample 140/0.1 also exceeded the ecological SAC for nickel, however, the concentration of nickel in the primary sample was below the SAC. Furthermore, it is noted that the surface fill at the above locations comprised subangular igneous basalt / roadbase (basalt) gravel to depths of up to 0.28 m. Local basalt gravels are known to have nickel concentrations that can exceed ecological SAC. On this basis, the nickel exceedances are not considered to warrant any further investigation.

- o Concentrations of nickel and lead in all other samples, and concentrations of all other metals were below the PQL and/or SAC;
- The following results were obtained for PAH:
 - o Concentrations of benzo(a)pyrene (BaP) exceeded the ecological SAC of 0.7 mg/kg in four samples, with concentrations ranging from 5.2 mg/kg to 85 mg/kg.

It is noted that the B(a)P ecological SAC is a low reliability value. Higher reliability screening levels have been published in CRC CARE Risk-based Management and Remediation Guidance for Benzo(a)pyrene (CRC CARE, 2017). The high reliability value of 33 mg/kg (or ranging from 21 mg/kg to 135 mg/kg) for fresh B(a)P suggests that the concentrations of B(a)P detected at the site are unlikely to pose an unacceptable risk to terrestrial ecosystems and therefore the exceedance(s) are not considered to be of concern;

- o Concentrations of BaP TEQ (and total PAH in certain samples, as indicated below) exceeded the health-based SAC of 3 mg/kg in the following samples:
 - 127/0.1 (16 mg/kg);
 - 128/0.1 (130 mg/kg). The concentration of total PAH in this sample (1200 mg/kg) also exceeded the health-based SAC of 300 mg/kg;
 - 129/0.65 (68 mg/kg). The concentration of total PAH in this sample (510 mg/kg) also exceeded the health-based SAC of 300 mg/kg; and
 - 133/0.1 (7.8 mg/kg).

Given that the concentration of BaP TEQ in the above samples is over 2.5 times the SAC, the locations are considered to be contamination hotspots. Concentrations of BaP TEQ in all other samples were either below the PQL and / or SAC; and

- The following results were obtained for TRH:
 - o Concentrations of TRH F3 fraction exceeded the ecological SAC of 300 mg/kg in samples 127/0.1 (540 mg/kg), 128/0.1 (3700 mg/kg) and 129/0.65 (1200 mg/kg). The management limit of 2500 mg/kg was also exceeded in sample 128/0.1. It is noted that these exceedances are located within the current PAH / TRH delineation area;
 - o Concentrations of TRH F3 fraction exceeded the ecological SAC of 300 mg/kg in sample 142/0.1 (380 mg/kg). It is noted that this sample comprises asphalt / roadbase. Given this, it is considered no further investigation / remediation is required at this location from a site contamination perspective on the basis that this material would not be suitable for use in landscaped areas;
 - o Concentrations of the F3 fraction in all other samples and concentrations of all other TRH fractions were below the PQL and / or SAC.

- The following results were obtained for PCB:
 - o Concentrations of PCB exceeded the human health SAC in samples 137/0.1 (1.2 mg/kg), 138/0.1 (3 mg/kg) and 139/0.1 (1.6 mg/kg). Based on review of current development plans (see Appendix A), it is noted that the PCB exceedances are within the proposed paved path. Given the absence of a source / receptor pathway, it is considered no further investigation / remediation is required at these locations from a site contamination perspective;
 - o Concentrations of PCB in all other samples were below the PQL or SAC.
- The following results were obtained for asbestos:
 - o Chrysotile asbestos was detected in fibre cement material > 7mm in sample 131/0.1, but the concentrations of FA and AF were below the PQL. DP notes that the SAC states that there should be no visible asbestos in surface soils. Given that asbestos was detected in fibre cement material > 7mm at location 131/0.1, the result is considered to be an exceedance of the health-based SAC; and
 - o No asbestos was detected in all other soil samples tested for asbestos, and the concentrations of FA and AF were below the PQL and SAC.

Current Investigation

The following results were obtained for the asbestos delineation sampling:

- Over 10 fragments of fibre cement material were retained on the sieve in the 10 L sample collected from Pits 203, 211, 216, and over 20 fragments were retained from sample 219;
- One fragment of fibre cement material (> 7 mm) was observed in sample 208 (approximate dimensions 45 mm x 25 mm);
- Four representative fibre cement fragments from Pits 203, 208, 211 and 216 were submitted for laboratory analysis and were confirmed to contain asbestos;
- The concentration of asbestos in ACM in samples 203, 211, 216, 219 and the original location, Bore 131 exceeded the HSL (0.01 % w/w); and
- Concentrations of FA and AF were <0.001 % w/w in the four samples analysed for FA/ AF.

The following results were obtained for the PAH / TRH delineation sampling:

- Concentrations of BaP exceeded the ecological SAC of 0.7 mg/kg in 17 samples, with concentrations ranging from 0.79 mg/kg to 43 mg/kg in 16 samples, and a concentration of 2,600 mg/kg in sample 221/0.15;

It is noted that the B(a)P ecological SAC is a low reliability value. Higher reliability screening levels have been published in CRC CARE Risk-based Management and Remediation Guidance for Benzo(a)pyrene (CRC CARE, 2017). The high reliability value of 33 mg/kg (or ranging from 21 mg/kg to 135 mg/kg) for fresh B(a)P suggests that the concentrations of B(a)P detected at the site (with the exception of sample 221/0.15) are unlikely to pose an unacceptable risk to terrestrial ecosystems and therefore the exceedance(s) are not considered to be of concern;

- The following exceedances, excluding the BaP exceedances discussed above, were reported for sample 221/0.15:

- o Concentrations of TRH fraction >C10 – C16 (2,500 mg/kg) exceeded the ecological SAC of 120 mg/kg and the management limit of 1,000 mg/kg;
- o Concentrations of TRH F2 fraction (2,500 mg/kg) exceeded the human health SAC of 110 mg/kg;
- o Concentrations of TRH F3 fraction (65,000 mg/kg) exceeded the ecological SAC of 300 mg/kg, the management limit of 2,500 mg/kg and the direct contact SAC of 4,500 mg/kg;
- o Concentrations of TRH F4 (8,900 mg/kg) exceeded the ecological SAC of 2,800 mg/kg;
- o Concentrations of naphthalene (16 mg/kg) exceeded the human health SAC of 3 mg/kg;
- o Concentrations of BaP TEQ (3,900 mg/kg) exceeded the human health SAC of 3 mg/kg; and
- o Concentrations of total PAH (34,000 mg/kg) exceeded the human health SAC of 300 mg/kg;
- The following exceedances were reported for sample 224/0.1:
 - o Concentrations of TRH >C10-C16 (170 mg/kg) exceeded the ecological SAC of 120 mg/kg;
 - o Concentrations of TRH F2 (170 mg/kg) exceeded the human health SAC of 110 mg/kg;
 - o Concentrations of TRH F3 (2,600 mg/kg) exceeded the ecological SAC of 300 mg/kg, and the management limit of 2,500 mg/kg;
 - o Concentrations of BaP TEQ (70 mg/kg) exceeded the human health SAC of 3 mg/kg; and
 - o Concentrations of Total PAH (870 mg/kg) exceeded the human health SAC of 300 mg/kg.
- The following exceedances were reported for TRH and PAH in the remaining samples:
 - o Concentrations of TRH F3 and B(a)P TEQ exceeded the ecological SAC of 300 mg/kg and the human health SAC of 3 mg/kg, respectively in the following samples:
 - Samples 226/0.1 (360 mg/kg and 9.6 mg/kg, respectively) and the corresponding QC sample;
 - Sample 230/0.1 (600 mg/kg and 7.2 mg/kg, respectively);
 - Sample 233/0.35 (1,100 mg/kg and 62 mg/kg, respectively). The concentration of total PAH (440 mg/kg) also exceeded the human health SAC of 300 mg/kg; and
 - Sample 236/0.25 (520 mg/kg and 9.9 mg/kg, respectively).
 - o Concentrations of TRH F3 exceeded the ecological SAC of 300 mg/kg in five other samples as outlined below:
 - Sample 222/0.1 (410 mg/kg) and the corresponding QC sample;
 - Sample 223/0.1 (590 mg/kg);
 - Sample 229/0.1 (570 mg/kg); and
 - Sample 231/0.1 (590 mg/kg).
 - o Concentrations of B(a)P TEQ exceeded the human health SAC of 3 mg/kg in four other samples as outlined below:
 - Sample 227/0.1 (3.2 mg/kg);
 - Sample 228/0.1 (14 mg/kg);
 - Sample 232/0.1 (5.1 mg/kg); and

- Sample 234/0.1 (13 mg/kg).
- A summary of the further laboratory analysis undertaken on the four worst-case samples is presented below:
 - o Coal tar was absent in all samples;
 - o Concentrations of phenols was below the PQL and SAC in all samples; and
 - o The TCLP and ASLP results indicated soil samples impacted by relatively high PAH concentrations typically have a low leaching potential (i.e. the PAH appear to be bound to the soil matrix and are therefore unlikely to leach PAH impacts into the underlying soils and/or migrate away from the source areas via groundwater seepage movement).

Reference should be made to Laboratory Report 291049-A (see Appendix H) for the pH, CEC and TOC results.

12. Discussion

The current SCI comprised a walkover and intrusive soil sampling and laboratory testing, with the objective of delineating the extent of asbestos and TRH/PAH contamination that was identified during the DSI (i.e. Bores 128, 129 and 131). The sub-surface conditions encountered during the current investigation were generally consistent with DP (2021).

Twenty test pits were excavated in the vicinity of Bore 131 to delineate the asbestos contamination. The asbestos delineation sampling identified the presence of buried asbestos fragments. The ACM appeared to have been primarily buried in a former trench (i.e. ACM mixed with soil used to reinstate a trench excavation). The condition of the ACM fragments was observed to be in poor to good condition, and the concentration of asbestos in soil, in the samples collected from along the former trench alignment exceeded the human health SAC. The approximate extent of the former trench is shown on Drawing 3, Appendix A. A fragment of ACM (< 7 mm) was observed in Pit 208, however, the concentration of asbestos in soil was below the SAC. Notwithstanding, the presence of any ACM at the ground surface would require remediation and / or management.

Twenty test pits were excavated in the vicinity of Bores 128 and 129 to delineate the PAH / TRH contamination. A summary of the PAH/TRH exceedances is presented in Table 4, and also identified on Drawing 3, Appendix A.

Table 4: Summary of Results that Exceeded the Site Assessment Criteria

Sampling Location	Contaminant Exceedance	SAC exceeded
DSI - DP (2021)		
Bores 127, 128 and 129	TRH F3 / B(a)P TEQ and / or Total PAH	Ecological / Human Health and / or Management Limit
Bore 133	B(a)P TEQ	Human Health
Current Investigation		
Pit 221 and 224	TRH and PAH	Ecological / Human Health / Management Limit and / or Direct Contact
Pits 226, 230, 233 and 236	TRH F3, B(a)P TEQ and / or Total PAH	Ecological / Human Health
Pit 222, 223, 229 and 231	TRH F3	Ecological
Pits 227, 228, 232, 234	B(a)P TEQ	Human Health

In the DSI, it was noted that asphalt and oyster shell fragments were observed in the fill at Bores 128 and 129, however, based on the results of sub-sampling/re-testing of observed inclusions, and correspondence with a laboratory analyst from the primary laboratory, Envirolab Services Pty Ltd (Envirolab), the likely source of PAH in Samples 128/0.1 and 129/0.65 was considered to be carbonaceous material (i.e. ash, charcoal or residual material from fires) observed in the fill.

DP (2021) considered that the concentration of TRH F3 fraction at location 128/0.1 may also be associated with the carbonaceous material.

It should be highlighted that the above conclusions were drawn from a small dataset (i.e. Bores 128 and 129). Based on the findings of the current SCI, the following is noted:

- Asphalt and / or subangular igneous roadbase/basalt was observed in Pits 127 to 129, 221, 222, 224 (see Figure 7 below), 229, 230, 231, 233, and 235 to 240. Exceedances of the SAC were observed at some of these locations. Furthermore, Pits 127 to 129, 221, 222 and 231 also had oyster shell inclusions;
- Oyster shells were observed in Pits 127 to 129, 133, 221 (see Figure 8 below), 222, 226, 227, 228, 231, 232, 234, and there was an exceedance of the SAC in all these locations. Furthermore, of these pits, Pits 133, 226, 227, 228 and 232 were not observed to have any noticeable asphalt / bitumen / carbonaceous inclusions; and
- Oyster shells were observed in certain pits within the asbestos delineation area (see Section 11.1); however, these samples were not tested for PAH / TRH, on the basis that the surface fill within this area was distinctly different to the fill surrounding Bores 128 and 129 (i.e. asphalt surface).

Taken together, it is currently not conclusive whether the source of PAH may be attributed to the carbonaceous material (i.e. ash, charcoal or residual material from fires), as initially hypothesised, or whether it may be attributed to asphalt / bitumen inclusions, or a possible association with the oyster shells. The results of the additional analysis suggest that the source of PAH is unlikely to be coal tar, based on multiple lines of evidence (i.e. the results of the presence / absence test, the phenol results which were less than PQL, and the low leachability results. Furthermore, based on correspondence with EnviroLab it was confirmed that the source was unlikely to be coal tar).

It is also considered that the PAH source at location 221 and 128 may be associated with a historic fuel leak in the former machinery shed, as identified in the CSM.



Figure 7: Sample 224 (washed) showing asphalt / bitumen inclusions



Figure 8: Sample 221 showing oyster shell fragments.

Overall, the results of the SCI suggest that there is currently a contamination data gap with regards to the extent of the PAH / TRH impacts. Given this, further investigation is considered to be warranted within PAEC 1.

13. Conclusions and Recommendations

Based on the results of the SCI, it is considered that the site can be made suitable for the proposed tourist and hotel development (from a site contamination standpoint), subject to the following recommendations:

- Preparation of a remediation action plan (RAP) – The RAP would include (but would not be limited to) the following:
 - o Further contamination sampling to address the data gap with regards to the lateral extent of PAH / TRH contamination:
 - Given that the oyster shells may be associated with the observed PAH/TRH exceedances, it is recommended that sampling is undertaken in the vicinity of Pit 204 (i.e. where oyster shells were observed in the fill) and tested for PAH / TRH and BTEX. Approximately five test pits are proposed in this area. The results of this further sampling would provide more conclusive evidence on the likely PAH/TRH source (i.e. oyster shell inclusions vs asphalt / bitumen or some carbonaceous material incorporated into the asphalt); and
 - Excavation of additional test pits to the east of Pits 232 and Bore 127;
 - o Remediation strategy for the asbestos and PAH/TRH impacted areas;
 - o Validation requirements; and
 - o An unexpected finds protocol (UFP), to establish a strategy / management procedure to be followed during construction works, should unexpected finds of contamination be uncovered.

14. References

- CRC CARE. (2017). *Risk-based Management and Remediation Guidance for Benzo(a)pyrene*. Technical Report no. 39: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.
- DP. (2021). *Report on Detailed Site Investigation (Contamination), Proposed Tourist and Visitor Development, 231 Pacific Highway, Mount White*. Ref: 202936.01.R.001.Rev1 dated 6 December 2021: Douglas Partners Pty Ltd.
- NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]*. Australian Government Publishing Services Canberra: National Environment Protection Council.
- NSW EPA. (1995). *Contaminated Sites, Sampling Design Guidelines*. NSW Environment Protection Authority.
- NSW EPA. (2020). *Guidelines for Consultants Reporting on Contaminated Land*. Contaminated Land Guidelines: NSW Environment Protection Authority.

15. Limitations

Douglas Partners (DP) has prepared this report for this project at 231 Pacific Highway, Mount White in accordance with DP's proposal 202936.02.P.001.Rev0 dated 17 February 2022. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of The Trustee for Mount White Trust for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions on the site only at the specific sampling and/or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of human influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the site that have not been sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible and not available for inspection/sampling. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that asbestos is not present.

The assessment of atypical safety hazards arising from this advice is restricted to the environmental components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd

Appendix A

About this Report

Drawing 1

Drawing 2

Drawing 3

Client-Supplied Plans

About this Report

Douglas Partners



Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

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

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

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

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;

- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

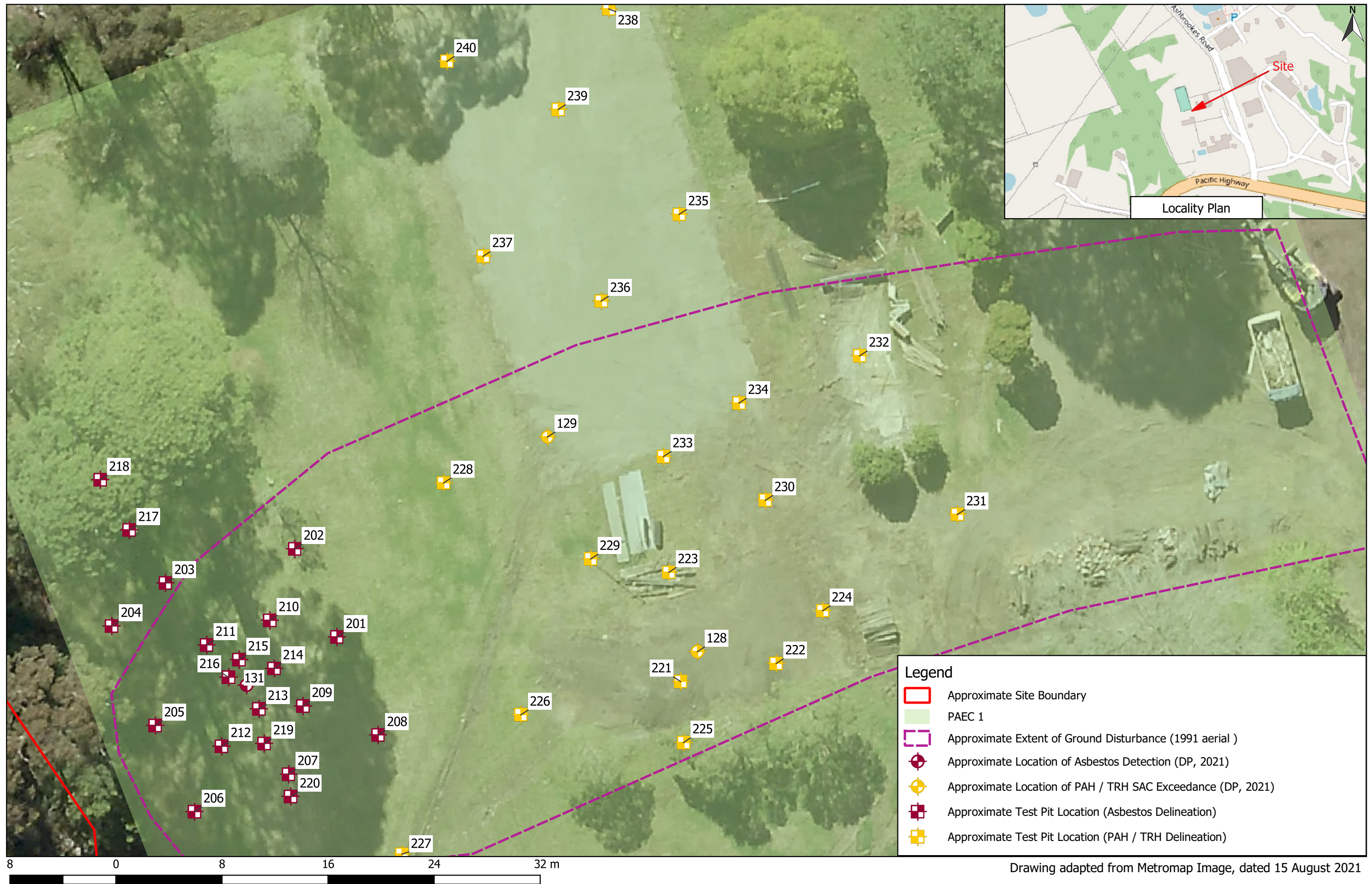
The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

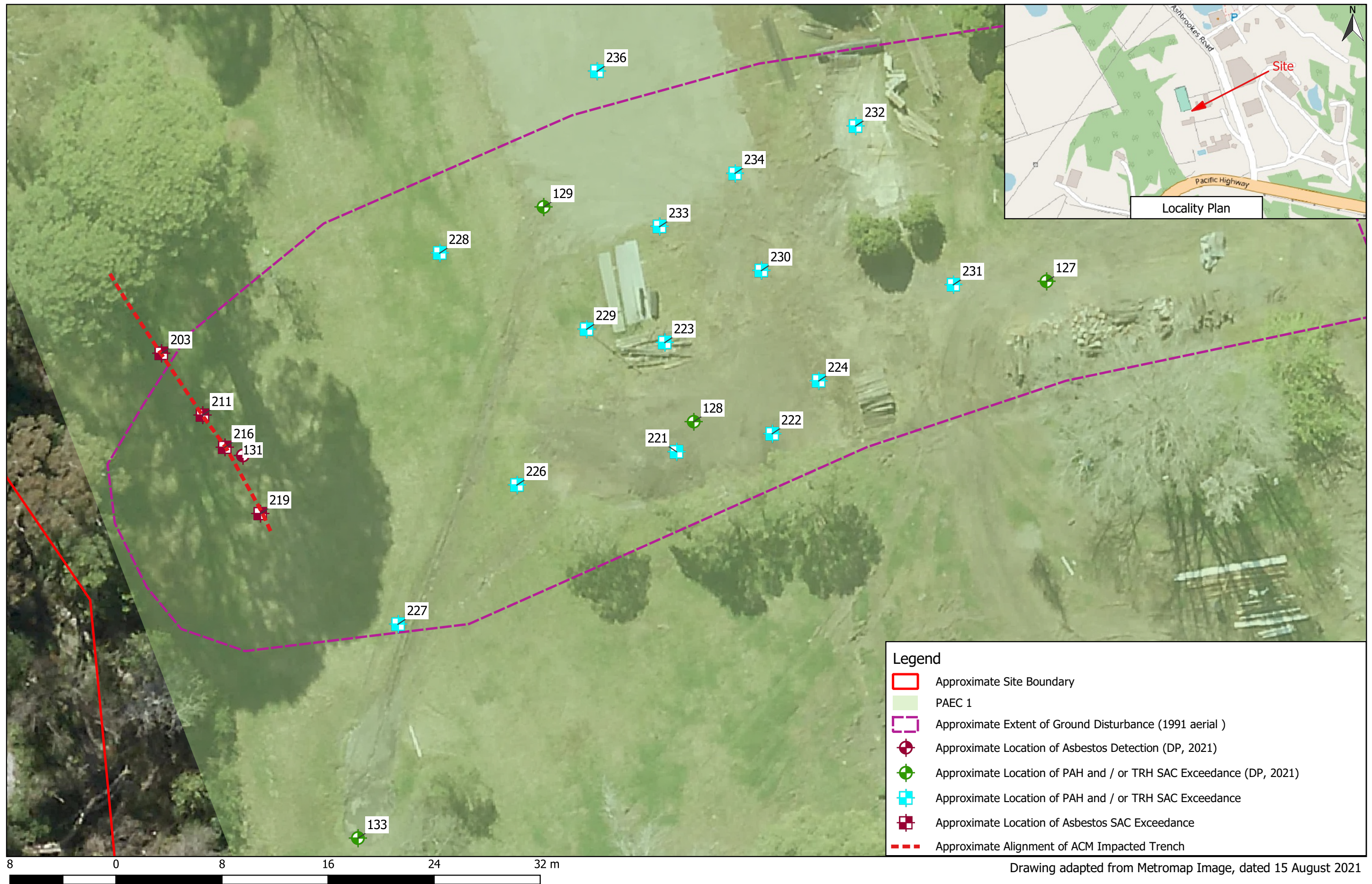


Legend

- Approximate Site Boundary
- Approximate Extent of PAEC 1
- Approximate Extent of Ground Disturbance (1991 aerial)
- Approximate Location of Asbestos Detection (DP, 2021)
- Approximate Location of PAH / TRH SAC Exceedance (DP, 2021)
- Approximate Borehole Location (DP, 2021)

Drawing adapted from Metromap Image, dated 15 August 2021







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any dimensions or quantities shown are for general design purposes. It is the user's responsibility to verify all dimensions and quantities before construction.

Rev.	Description	Date
DA	Development Application Issue	03/06/2021
DAa	Development Application Issue - revised	25/10/2021
DAb	S4.55 Application Issue	28/03/2022
	· design ramp access and court to sub floor Cellars and Storage	
	· design sub floor cellars and storage	
	· add lift	

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#Site ID

Site Plan		
Scale @ A1 1:500	June 2021	Issue: DAb
Project: 2016	Plot Date: 28.03.2022	D.01



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Rev.	Description	Date
DA	Development Application Issue	03/16/2021
DA	Development Application Issue - revised	25/10/2021
DAB	S4.55 Application Issue	28/03/2022
	- realign ramp access and court to sub floor Cellars and Storage	
	- realign sub floor cellars and storage	
	- add lift	

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Ground Floor Plan

Scale @ A1 1:200	June 2021	Issue: Dab
Project: 2016	Plot Date: 28.03.2022	D.02

Rev.	Description	Date
DA	Development Application Issue	03/16/2021
DAa	Development Application Issue - revised	25/10/2021
DAb	S4.55 Application Issue - realign ramp access and court to sub floor - floor Collars and Storage - align sub floor collars and storage - add lift	28/03/2022



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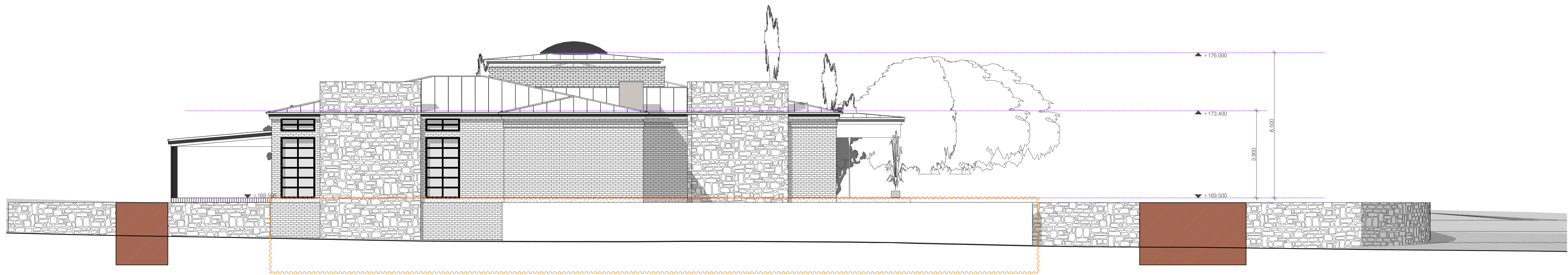
#Site ID

Section

Scale @ A1 1:100	June 2021	Issue: DAb
Project: 2016	Plot Date: 28.03.2022	D.04



S South Elevation (Pacific Hwy frontage)
Scale 1:100



W West Elevation
#LayID Scale 1:100

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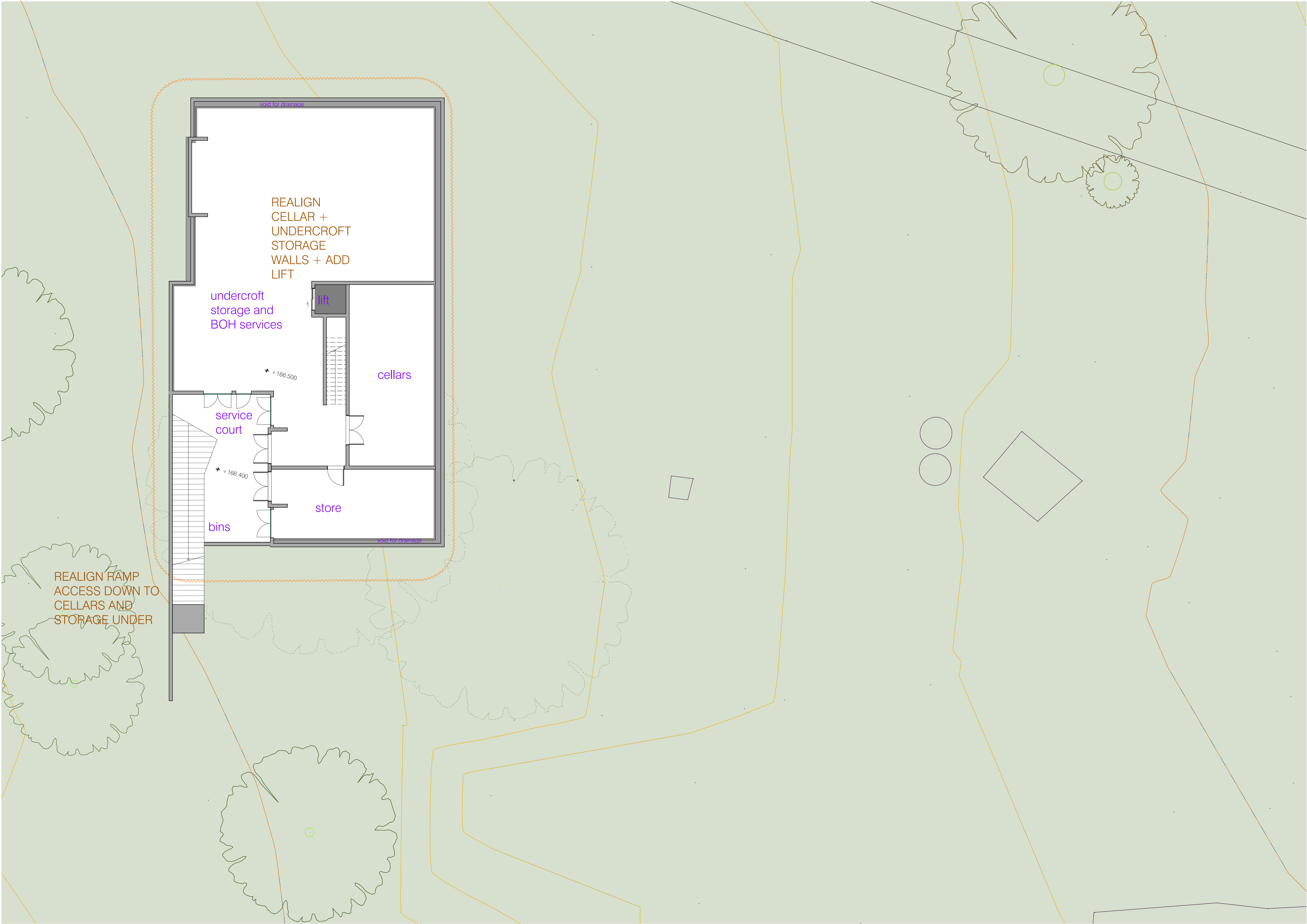
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Elevations		
Scale @ A1 1:100	June 2021	Issue: DAb
Project: 2016	Plot Date: 28.03.2022	D.05



Preliminary

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#Site ID

Sub Floor Plan

Scale @ A1 1:100	May 2021	Issue MP/a
Project: 2016	Plot Date: 27.05.2021	D02a

Appendix B

Table B1: Summary of Laboratory Results (DP, 2021)

Table B2: Summary of Laboratory Results

Table B3: Summary of Gravimetric Screening – Field and Analytical

Table B1: Summary of Laboratory Results – Metals, TRH, BTEX, PAH (DP, 2021)

			Metals									TRH						BTEX				PAH												
			Arsenic	Cadmium	Total Chromium	Copper	Lead	Mercury (inorganic)	Nickel	Zinc		TRH C8-C10	TRH C10-C16	F1 (C10-C16+Ex)	F2 (C10-C16+Naphthalene)	F3 (C10-C14)	F4 (C14-C16)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene ^b	Benzo(a)pyrene (BaP)	Benzo(b)pyrene (BbP)	Total PAHs									
Sample ID ^a	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg									
1010.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	10	14	11	<0.1	18	18	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1020.1	0 - 0.1 m	14/10/2021	15	<0.4	33	<2	13	<0.1	5	6	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1030.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	4	<1	17	<0.1	<1	35	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1040.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	3	5	22	<0.1	<1	22	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1050.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	3	5	390	<0.1	<1	23	<25	<50	<25	180	110	<50	<100	<100	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	<0.05	<0.5	<0.05	<0.05
1060.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	2	12	180	<0.1	<1	23	<25	<50	<25	180	110	<50	<100	<100	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	<0.05	<0.5	<0.05	<0.05
QA1	0 - 0.1 m	14/10/2021	<0.4	<0.4	2	6	200	<0.1	<1	22	<25	<50	<25	180	110	<50	<100	<100	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	<0.05	<0.5	<0.05	<0.05
1070.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	6	5	44	<0.1	1	36	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1080.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	7	<1	6	<0.1	1	4	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1090.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	28	22	5	<0.1	23	19	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1100.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	1	2	<0.1	<1	5	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1110.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	<1	1	<0.1	<1	2	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
QA2	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	<1	1	<0.1	<1	1	<25	<50	<25	180	110	<50	<100	<100	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	<0.05	<0.5	<0.05	<0.05
1120.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	<1	1	<0.1	<1	1	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1130.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	<1	<1	<0.1	<1	2	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1140.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	<1	2	<0.1	<1	2	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1150.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	4	1	5	<0.1	<1	6	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1160.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	6	1	5	<0.1	<1	12	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1170.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	4	7	8	<0.1	<1	8	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
QA3	0 - 0.1 m	14/10/2021	<0.4	<0.4	3	4	6	<0.1	<1	5	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1180.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	3	1	4	<0.1	<1	4	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1190.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	<1	2	3	<0.1	<1	10	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1200.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	7	3	10	<0.1	<1	22	<25	<50	<25	180	110	<50	<100	<100	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	<0.05	<0.5	<0.05	<0.05
1210.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	4	1	7	<0.1	<1	9	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1220.05	0 - 0.1 m	14/10/2021	<0.4	<0.4	5	2	7	<0.1	<1	11	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
QA4	0 - 0.1 m	14/10/2021	<5	<1	5	<5	8	<0.1	<2	10	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1230.1	0 - 0.1 m	14/10/2021	<0.4	<0.4	6	5	7	<0.1	<1	24	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
QA5	0 - 0.1 m	14/10/2021	<5	<1	4	<5	9	<0.1	<2	33	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1240.1	0 - 0.1 m	15/10/2021	<0.4	<0.4	3	2	5	<0.1	<1	8	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1250.1	0 - 0.1 m	15/10/2021	<0.4	<0.4	5	<1	19	<0.1	<1	6	-	-	-	-	-	-	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
1260.1	0 - 0.1 m	15/10/2021	<0.4	<0.4	4	2	41	<0.1	<1	28	<25	<50	<25	180	110	<50	<100	<100	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	0.1	<0.5	<0.5	1.1
1270.1	0 - 0.1 m	15/10/2021	<0.4	<0.4	3	15	34	<0.1	<1	7	<25	<50	<25	180	110	<50	540	440	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	11	<0.5	16	89
1280.1	0 - 0.1 m	15/10/2021	<0.4	<0.4	8	35	96	<0.1	13	180	<25	72	<25	180	110	<50	370	1400	<2800	0.5	50	160	85	55	70	40	105	3	170	<1	85	<0.5	130	1200
1280.5	0.4 - 0.5 m	15/10/2021	<0.4	<0.4	8	<1	4	<0.1	1																									

Table B1 continued: Summary of Laboratory Results – OCP, OPP, PCB, Asbestos (DP, 2021)

			OCP												OPP	PCB	Asbestos					
			DDD	DDT+DDE+DDD ^c	DDE	DDT	Alrin & Dieldrin	Total Chlordane	Endrin	Total Endosulfan	Hepachlor	Hexachlorobenzene	Methoxychlor	Chlorpyrifos	Total PCB		Asbestos ID in soil >0.1µg	Trace Analysis	ACM >7mm Estimation	FA and AF Estimation	FA and AF Estimation	Asbestos Summary ^b
		PQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	-	-	-	-	<0.001	-	
Sample ID ^a	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	-	g	g	%(w/w)	-	
			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	
101/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
102/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
103/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
104/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
105/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
106/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
107/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
108/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
109/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
110/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
111/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
QA2	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
112/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
113/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
114/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
115/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
116/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
117/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
QA3	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
118/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
119/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
120/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
121/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
122/0.05	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
123/0.1	0 - 0.1 m	14/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
124/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
125/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	-	
126/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
127/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
128/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
128/0.5	0.4 - 0.5 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	-	
129/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
129/0.65	0.6 - 0.7 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
130/0.05	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
131/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	AD	
132/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
133/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
134/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	-	
135/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
136/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
137/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	1.2	NAD	
138/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	3	NAD	
138/1.1	1 - 1.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
139/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	1.6	NAD	
139/0.5	0.4 - 0.5 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
140/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	0.3	NAD	
140/0.4	0.3 - 0.4 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
141/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.6	NAD	
142/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
143/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
144/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
145/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	<0.1	NAD	
146/0.1	0 - 0.1 m	13/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	
147/0.1	0 - 0.1 m	15/10/2021	<0.1	240 180	<0.1	<0.1	180 6	<0.1	50	<0.1	10	<0.1	270	6	<0.1	300	160	-	1	-	-	

Lab result

HIL/HSL value

EIL/ESL value

HIL/HSL exceedance

EIL/ESL exceedance

HIL/HSL and EIL/ESL exceedance

ML exceedance

ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report

Blue

= DC exceedance

HSL 0<1 Exceedance

Bold = Lab detections

- = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable

NL = Non limiting

AD = Asbestos detected

NAD = No Asbestos detected

HIL

= Health investigation level

HSL

= Health screening level (excluding DC)

EIL

= Ecological investigation level

ESL

= Ecological screening level

ML

= Management Limit

DC

= Direct Contact HSL

Notes:

a

QA/Q

Table B2: Summary of Laboratory Results – TRH, BTEX, PAH

			TRH						BTEX				PAH																	
			TRH C6 - C10	TRH >C10-C16	F1 (C6-C10)-BTEX	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene ^b	Benz(a)pyrene (BaP)	Benzofluoranthene (BzF)	Total PAHs														
		PQL	25	50	25	50	100	100	0.2	0.5	1	1	0.1	0.05	0.5	0.05														
Sample ID ^a	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg														
221/0.15	0.1 - 0.2 m	11/03/2022	<25	2500	<25	2500	3000	8900	<0.2	<0.5	<1	<1	16	2600	3900	34000														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
221/0.3	0.2 - 0.3 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	1.2	2.1	22														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
222/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	410	380	<0.2	<0.5	<1	<1	<0.1	0.79	1.4	11														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
QA1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	540	580	<0.2	<0.5	<1	<1	<0.1	0.52	0.7	3.6														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
222/0.3	0.3 - 0.4 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
223/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	590	650	<0.2	<0.5	<1	<1	<0.1	0.4	0.6	4.7														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
224/0.1	0 - 0.1 m	11/03/2022	<25	170	<25	170	2600	1000	<0.2	<0.5	<1	<1	0.7	42	70	870														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
225/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
226/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	360	240	<0.2	<0.5	<1	<1	<0.1	5.1	9.6	85														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
QA3	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	470	290	<0.2	<0.5	<1	<1	<0.1	16	22	120														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
227/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	1.8	3.2	27														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
228/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	180	<100	<0.2	<0.5	<1	<1	<0.1	9.4	14	99														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
229/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	570	720	<0.2	<0.5	<1	<1	<0.1	0.58	1	6.4														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
230/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	600	610	<0.2	<0.5	<1	<1	<0.1	4.2	7.2	57														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
231/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	590	740	<0.2	<0.5	<1	<1	<0.1	0.85	1.4	8.1														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
232/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	2.9	5.1	50														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
233/0.2	0.1 - 0.2 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	1.8	2.4	14														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
233/0.35	0.3 - 0.4 m	11/03/2022	<25	<50	<25	<50	1100	520	<0.2	<0.5	<1	<1	<0.1	43	62	440														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
233/0.5	0.4 - 0.5 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	1.7	2.3	13														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
234/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	290	200	<0.2	<0.5	<1	<1	<0.1	9.2	13	67														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
235/0.05	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.4	0.6	3.1														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
236/0.25	0.2 - 0.3 m	11/03/2022	<25	<50	<25	<50	520	600	<0.2	<0.5	<1	<1	1.4	7.2	9.9	81														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
236/0.35	0.3 - 0.4 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	<0.05	<0.5	<0.05														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
237/0.05	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.1	<0.5	0.4														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
238/0.05	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.1	<0.5	0.4														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
239/0.05	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.2	<0.5	1.4														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-
240/0.05	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.1	0.8	1	5.3														
			-	-	-	120	45	180	110	-	-	300	-	2800	0.5	50	160	85	55	70	40	105	3	170	-	0.7	3	-	300	-

Lab result

HIL/HSL value

EIL/ESL value

HIL/HSL exceedance

EIL/ESL exceedance

HIL/HSL and EIL/ESL exceedance

ML exceedance

ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report

Blue = DC exceedance

HSL 0-1 Exceedance

Bold = Lab detections

- = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable

NL = Non limiting

AD = Asbestos detected

NAD = No Asbestos detected

HIL = Health investigation level

HSL = Health screening level (excluding DC)

EIL = Ecological investigation level

ESL = Ecological screening level

ML = Management Limit

DC = Direct Contact HSL

Notes:

a

QA/QC replicate of sample listed directly below the primary sample

b

Reported naphthalene laboratory result obtained from BTEXN suite

Site Assessment Criteria (SAC):

Reference should be made to the SAC section of the report. Summary information as follows:

SAC based on generic land use thresholds for Residential A with garden/accessible soil

HIL A

Residential / Low - High Density (NEPC, 2013)

HSL A/B

Residential / Low - High Density (vapour intrusion) (NEPC, 2013)

DC HSL A

Direct contact HSL A Residential (Low density) (direct contact) (CRC CARE, 2011)

EIL/ESL UR/POS

Urban Residential and Public Open Space (NEPC, 2013)

ML R/P/POS

Residential, Parkland and Public Open Space (NEPC, 2013)

Table B2 continued: Summary of Laboratory Results – Additional Analysis and Asbestos

			Phenol	Coal Tar	TCLP			ASLP			Asbestos
			Phenol	Coal Tar ID	TCLP Naphthalene	TCLP Benzo(a)pyrene (BaP)	TCLP Total PAH	ASLP Naphthalene	ASLP Benzo(a)pyrene (BaP)	ASLP Fluoranthene	Asbestos ID (fragments)
		PQL	5	-	0.001	0.001	-	0.001	0.001	0.001	-
Sample ID	Depth	Sample Date	mg/kg	-	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	-
221/0.15	0.1 - 0.2 m	11/03/2022	<5	Absent	0.003	<0.001	0.14	0.001	<0.001	0.044	-
			100 -								
224/0.1	0 - 0.1 m	11/03/2022	<5	Absent	<0.001	<0.001	-	<0.001	<0.001	<0.001	-
			100 -								
228/0.1	0 - 0.1 m	11/03/2022	<5	Absent	<0.001	<0.001	-	<0.001	<0.001	<0.001	-
			100 -								
233/0.35	0.3 - 0.4 m	11/03/2022	<5	Absent	<0.001	<0.001	0.0013	<0.001	<0.001	<0.001	-
			100 -								
203/FC	0 m	9/03/2022	-	-	-	-	-	-	-	-	AD
			100 -								
208/FC	0 m	9/03/2022	-	-	-	-	-	-	-	-	AD
			100 -								
211/FC	0 m	9/03/2022	-	-	-	-	-	-	-	-	AD
			100 -								
216/FC	0 m	9/03/2022	-	-	-	-	-	-	-	-	AD
			100 -								

Lab result	
HIL/HSL value	EIL/ESL value

■ Indicates that asbestos has been detected by the lab, refer to the lab report

Bold = Lab detections - = Not tested or No HIL/HSL/EIL/ESL (as applicable) or Not applicable AD = Asbestos detected NAD = No Asbestos detected

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level

Site Assessment Criteria (SAC):

Reference should be made to the SAC section of the report. Summary information as follows:

SAC based on generic land use thresholds for Residential A with garden/accessible soil

HIL A Residential / Low - High Density (NEPC, 2013)

HSL A/B Residential / Low - High Density (vapour intrusion) (NEPC, 2013)

EIL/ESL UR/POS Urban Residential and Public Open Space (NEPC, 2013)

Table B3 - Summary of Gravimetric Screening - Field and Analytical Results

Sample ID	Sample Date	Weight of 10 Litre Bulk Sample (kg)	Number of fragments > 7mm	Condition of Fragments (good/poor)	Size range of Fragment (mm)	Weight of Screened ACM (g)	Concentration of asbestos in ACM in soil (% w/w)*	Concentration of asbestos FA and AF in soil (% w/w)^	Outcome
HSL for Asbestos in soil							0.01	0.001	
131/0-0.2	9/03/2022	19.8	5	good and poor	40 to 90	205	0.16	-	FAIL
201/0-0.2	9/03/2022	18.3	0	-	-	-	-	-	PASS
202/0-0.4	9/03/2022	19.0	0	-	-	-	-	-	PASS
203/0-0.75	9/03/2022	19.7	>10	poor	40 to 130	420	0.32	<0.001	FAIL
204/0-0.6	9/03/2022	18.7	0	-	-	-	-	-	PASS
205/0-0.4	9/03/2022	18.5	0	-	-	-	-	-	PASS
206/0-0.2	9/03/2022	15.5	0	-	-	-	-	-	PASS
207/0-0.3	9/03/2022	16.4	0	-	-	-	-	-	PASS
208/0-0.4	9/03/2022	19.2	1	good	45	7.84	0.006	<0.001	PASS
209/0-0.35	9/03/2022	17.1	0	-	-	-	-	-	PASS
210/0-0.25	9/03/2022	17.2	0	-	-	-	-	-	PASS
211/0-0.8	9/03/2022	19.5	>10	poor	40 to 90	490	0.38	<0.001	FAIL
212/0 - 0.2	9/03/2022	17.2	0	-	-	-	-	-	PASS
212/0.2-0.4	9/03/2022	17.8	0	-	-	-	-	-	PASS
213/0-0.4	9/03/2022	15.7	0	-	-	-	-	-	PASS
214/0-0.2	9/03/2022	19.0	0	-	-	-	-	-	PASS
215/0-0.25	9/03/2022	17.8	0	-	-	-	-	-	PASS
216/0-0.8	9/03/2022	18.0	>10	good and poor	40 to 130	635	0.53	<0.001	FAIL
218/0-0.6	11/03/2022	19.1	0	-	-	-	-	-	PASS
219/0-0.7	11/03/2022	18.6	>20	good and poor	50 to 140	702	0.6	-	FAIL
220/0-0.5	11/03/2022	19.6	0	-	-	-	-	-	PASS

Notes

HSL Asbestos in soil	Residential A Land Use
*	Based on % w/w asbestos in soil assuming 15% asbestos in ACM
^	Based on result reported by the laboratory
	HSL Exceedance

Appendix C

Previous DP (2021) Logs

Test Pit Logs

Sampling Methodology

Soil Descriptions



Symbols and Abbreviations

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.5 AHD
EASTING: 332182.2
NORTHING: 6296914.8

PIT No: 201
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Gravelly Silty SAND: coarse grained, grey and pale grey, gravels oyster shells, moist, fill		B D	0.0		PID<1ppm					
	0.1											
	0.2	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial										
	0.5	Pit discontinued at 0.5m- Limit of Investigation										
166												
	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.6 AHD
EASTING: 332179
NORTHING: 6296921.5

PIT No: 202
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
		Silty SAND (SM): medium grained, grey brown, trace rootlets, wet, residual		D	0.0							
				B	0.1		PID<1ppm					
	0.4	Pit discontinued at 0.4m- Limit of Investigation			0.4							
167												
1												
166												
2												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	sp	Standard penetration test
E	Environmental sample	W	Water level	S	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.5 AHD
EASTING: 332169.3
NORTHING: 6296918.9

PIT No: 203
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



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TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.5 AHD
EASTING: 332165.2
NORTHING: 6296915.7

PIT No: 204
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample		Water seep
E	Environmental sample		Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



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TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.4 AHD
EASTING: 332168.5
NORTHING: 6296908.2

PIT No: 205
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167	0.0	Silty SAND (SM): medium grained, grey brown, trace rootlets, wet, residual			0.0							
				D	0.1		PID<1ppm					
				B								
	0.4	Pit discontinued at 0.4m- Limit of Investigation			0.4							
165	1											
166	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	sp	Standard penetration test
E	Environmental sample	≡	Water level	S	Shear vane (kPa)
				V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.2 AHD
EASTING: 332171.5
NORTHING: 6296901.7

PIT No: 206
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Silty SAND: medium grained, grey, with oyster shells, trace plastic (5 pieces), trace sandstone cobbles, trace rootlets, moist to wet, fill		B D	0.0		PID<1ppm					
	0.2				0.1							
		Silty SAND (SM): medium grained, grey brown, trace rootlets, wet, residual			0.2							
	0.4	Pit discontinued at 0.4m- Limit of Investigation										
1												
166												
	2											
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.1 AHD
EASTING: 332178.6
NORTHING: 6296904.5

PIT No: 207
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W _s	Water seep
E	Environmental sample	W _l	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.4 AHD
EASTING: 332185.3
NORTHING: 6296907.4

PIT No: 208
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Gravelly Silty SAND: medium to coarse grained, red brown mottled grey brown, trace plastic (5-6 pieces), trace charcoal, trace timber (3-4 pieces), trace plastic mesh, trace oyster shells, trace clay, moist to wet, fill		D	0.0		PID<1ppm					
				B	0.1							
	0.4											
	0.4	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial			0.4							
	0.6	Pit discontinued at 0.6m- Limit of Investigation										
1												
166												
2												
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2


SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.3 AHD
EASTING: 332179.7
NORTHING: 6296909.6

PIT No: 209
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Gravelly Silty SAND: coarse grained, grey and pale grey, gravels oyster shells, trace rubber (1 shoe), moist, fill			0.0		PID<1ppm					
				B D	0.2							
	0.35	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial			0.35							
	0.5	Pit discontinued at 0.5m- Limit of Investigation										
1												
166												
2												
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2


SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _t	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.4 AHD
EASTING: 332177.2
NORTHING: 6296916.1

PIT No: 210
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Gravelly Silty SAND: medium grained, grey brown, trace asphalt, trace oyster shells, trace plastic (3-4 pieces), trace charcoal, moist to wet, fill		D B	0.0		PID<1ppm					
					0.1							
	0.25	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial			0.25							
	0.6	Pit discontinued at 0.6m- Limit of Investigation										
1												
166												
2												
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.3 AHD
EASTING: 332172.4
NORTHING: 6296914.2

PIT No: 211
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS: With test pit, fill is localised to small section, most likely a filled trench.

☐ Sand Penetrometer AS1289.6.3.3

☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U _r	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W _{sp}	Water seep
E	Environmental sample	W _l	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



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TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.2 AHD
EASTING: 332173.5
NORTHING: 6296906.6

PIT No: 212
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)




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TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.2 AHD
EASTING: 332176.3
NORTHING: 6296909.4

PIT No: 213
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Gravelly Silty SAND: coarse grained, grey and pale grey, gravels oyster shells, moist, fill			0.0							
				B D	0.2		PID<1ppm					
	0.4	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial			0.4							
	0.6	Pit discontinued at 0.6m- Limit of Investigation										
1												
166												
	2											
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2


SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	sp	Standard penetration test
E	Environmental sample	W	Water level	S	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.3 AHD
EASTING: 332177.5
NORTHING: 6296912.5

PIT No: 214
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Silty SAND: medium to coarse grained, grey, trace oyster shells, trace metal (1 large piece >1.5m length of steel), trace asphalt, trace charcoal, moist to wet, fill		B D	0.0		PID<1ppm					
	0.2	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial			0.1							
					0.2							
	0.5	Pit discontinued at 0.5m- Limit of Investigation										
1												
166												
2												
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.2 AHD
EASTING: 332174.8
NORTHING: 6296913.1

PIT No: 215
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W _s	Water seep
E	Environmental sample	W _l	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.2 AHD
EASTING: 332174.1
NORTHING: 6296911.8

PIT No: 216
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS: With test pit, fill is localised to small section, most likely a filled trench.

☐ Sand Penetrometer AS1289.6.3.3

☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)




TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.6 AHD
EASTING: 332166.6
NORTHING: 6296922.9

PIT No: 217
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
		FILL/Gravelly Silty SAND: medium grained, brown, with oyster shells, with oyster shell net										
167	0.4	Pit discontinued at 0.4m- Refusal due to net entanglement and water influx										
166												
	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS: Pit discontinued due to return and difficulty, likely with water in the pit

☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.6 AHD
EASTING: 332164.4
NORTHING: 6296926.7

PIT No: 218
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167		FILL/Gravelly Silty SAND: medium grained, grey and grey brown, with tree roots, with trace charcoal, wet, fill			0.0							
				D	0.2		PID<1ppm					
				B								
	0.6	Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial			0.6							
	0.8	Pit discontinued at 0.8m- Limit of Investigation										
1												
166												
2												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	sp	Standard penetration test
E	Environmental sample	W	Water level	S	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.1 AHD
EASTING: 332176.8
NORTHING: 6296906.8

PIT No: 219
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



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TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.1 AHD
EASTING: 332178.8
NORTHING: 6296902.8

PIT No: 220
PROJECT No: 202936.02
DATE: 9/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS: No evidence of trench at TP220

☐ Sand Penetrometer AS1289.6.3.3

☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



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TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.5 AHD
EASTING: 332208.2
NORTHING: 6296911.5

PIT No: 221
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
168	0.1	FILL/Gravelly SAND: coarse grained, grey brown and black, gravels apshalt and subangular igneous roadbase, moist, fill		D/E	0.05		PID<1ppm					
	0.2	FILL/Gravelly SAND: coarse grained, black and dark grey, with oyster shells, bituminous odour, most likely asphalt, moist, fill		D/E	0.15		PID<1ppm					
	0.3	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
167	0.6	Pit discontinued at 0.6m- Limit of Investigation										
	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.7 AHD
EASTING: 332215.4
NORTHING: 6296912.8

PIT No: 222
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
168		FILL/Gravelly SAND: coarse grained, grey brown and black, gravels subangular roadbase and asphalt <30mm, with oyster shells, moist, fill		D/E	0.1	QA1	PID<1ppm					
	0.25	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.6	Pit discontinued at 0.6m- Limit of Investigation										
167	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.5 AHD
EASTING: 332207.3
NORTHING: 6296919.7

PIT No: 223
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
168	0.2	FILL/Gravelly SAND: coarse grained, black and dark grey, bituminous odour, most likely asphalt, moist, fill		D/E	0.1		PID<1ppm					
		Clayey SAND: medium grained, yellow brown, moist, residual										
	0.5	Pit discontinued at 0.5m- Limit of Investigation		D/E	0.5		PID<1ppm					
167	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	sp	Standard penetration test
E	Environmental sample	≡	Water level	S	Shear vane (kPa)
		V		V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.8 AHD
EASTING: 332218.9
NORTHING: 6296916.8

PIT No: 224
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
168	0.2	FILL/Gravelly SAND: coarse grained, dark grey and black, asphalt and subangular igneous roadbase, moist, fill		D/E	0.1		PID<1ppm					
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.7	Pit discontinued at 0.7m- Limit of Investigation										
167	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

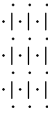

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W _s	Water seep	S	Standard penetration test
E	Environmental sample	W _L	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.1 AHD
EASTING: 332208.4
NORTHING: 6296906.9

PIT No: 225
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
168	0.1	Silty SAND (SM): medium grained, grey brown, trace rootlets, wet, residual		D/E	0.1		PID<1ppm					
	0.2	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.4	Pit discontinued at 0.4m- Limit of Investigation										
167	1											
166	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	sp	Standard penetration test
E	Environmental sample	≡	Water level	S	Shear vane (kPa)
		V		V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.9 AHD
EASTING: 332196.1
NORTHING: 6296909

PIT No: 226
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167	0.2	FILL/Silty SAND: medium grained, brown and grey, with oyster shells, moist, fill		D/E	0.1	QA3	PID<1ppm					
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.5	Pit discontinued at 0.5m- Limit of Investigation										
166	1											
	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	sp	Standard penetration test
E	Environmental sample	W	Water level	S	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.3 AHD
EASTING: 332187.1
NORTHING: 6296898.5

PIT No: 227
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
167	0.2	FILL/Silty SAND: medium grained, brown and grey, with oyster shells, moist, fill		D/E	0.1	QA4	PID<1ppm					
		Silty Sandy CLAY: low plasticity, brown, w<PL, alluvial		D/E	0.3		PID<1ppm					
	0.6	Pit discontinued at 0.6m- Limit of Investigation										
1												
166												
2												
165												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.2 AHD
EASTING: 332190.3
NORTHING: 6296926.5

PIT No: 228
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W _s	Water seep
E	Environmental sample	W _l	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)



TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.4 AHD
EASTING: 332201.4
NORTHING: 6296920.7

PIT No: 229
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W _s	Water seep
E	Environmental sample	W _l	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)





TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.9 AHD
EASTING: 332214.6
NORTHING: 6296925.1

PIT No: 230
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
	0.2	FILL/Gravelly SAND: coarse grained, grey brown and black, gravels asphalt and subangular igneous roadbase, moist, fill		D/E	0.1		PID<1ppm					
	0.2	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.7	Pit discontinued at 0.7m- Limit of Investigation										
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2


SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W _s	Water seep	S	Standard penetration test
E	Environmental sample	W _L	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.4 AHD
EASTING: 332229
NORTHING: 6296924.1

PIT No: 231
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169		FILL/Sandy GRAVEL: coarse grained, dark grey and pale grey, gravels asphalt and oyster shells, moist, fill		D/E	0.1		PID<1ppm					
	0.2	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.4	Pit discontinued at 0.4m- Limit of Investigation										
168												
167												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.1m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.4 AHD
EASTING: 332221.7
NORTHING: 6296936

PIT No: 232
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169		FILL/Sandy GRAVEL: coarse grained, pale grey and brown, gravels oyster shells, moist to wet, fill		D/E	0.1		PID<1ppm					
	0.2	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm					
	0.4	Pit discontinued at 0.4m- Limit of Investigation										
168												
167												

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.0 AHD
EASTING: 332206.9
NORTHING: 6296928.5

PIT No: 233
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169	0.1	FILL/Gravelly SAND: coarse grained, grey, with organics, gravels subangular roadbase, trace asphalt <20mm, wet, fill		D/E	0.05		PID<1ppm					
		FILL/Clayey SAND: medium grained, yellow brown, moist, fill		D/E	0.2		PID<1ppm					
	0.3	FILL/Gravelly SAND: coarse grained, black and dark grey, bituminous odour, moist likely asphalt, moist, fill		D/E	0.35		PID<1ppm					
	0.4	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.5		PID<1ppm					
	0.6	Pit discontinued at 0.6m- Limit of Investigation										
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.0 AHD
EASTING: 332212.6
NORTHING: 6296932.5

PIT No: 234
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169		FILL/Sandy GRAVEL: coarse grained, pale grey and brown, gravels oyster shells, moist to wet, fill		D/E	0.1		PID<1ppm					
	0.25	Clayey SAND: medium grained, yellow brown, moist, residual										
	0.4	Pit discontinued at 0.4m- Limit of Investigation		D/E	0.4		PID<1ppm					
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: Seepage at 0.0m

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	Sp	Standard penetration test
E	Environmental sample	≡	Water level	S	Shear vane (kPa)
		V		V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.1 AHD
EASTING: 332208.1
NORTHING: 6296946.7

PIT No: 235
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test ls(50) (MPa)
		PL(D)	Point load diametral test ls(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)






TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.0 AHD
EASTING: 332202.2
NORTHING: 6296940.2

PIT No: 236
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169		FILL/Gravelly SAND: coarse grained, grey, with organics, gravels subangular roadbase, trace asphalt <20mm, fill		D/E	0.1		PID<1ppm					
	0.2	FILL/Gravelly SAND: coarse grained, black and dark grey, bituminous odour, most likely asphalt, moist, fill		D/E	0.25		PID8ppm					
	0.3	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.35		PID<1ppm					
	0.4	Pit discontinued at 0.4m- Limit of Investigation										
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.9 AHD
EASTING: 332193.3
NORTHING: 6296943.6

PIT No: 237
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
	0.1	FILL/Gravelly SAND: coarse grained, grey, with organics, gravels subangular roadbase, trace asphalt <20mm, wet, fill		D/E	0.05		PID<1ppm					
	0.2	Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.2		PID<1ppm					
	0.3	Pit discontinued at 0.3m- Limit of Investigation										
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U _s	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	S	Standard penetration test
E	Environmental sample	W	Water level	V	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.2 AHD
EASTING: 332202.7
NORTHING: 6296962.2

PIT No: 238
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

[illegible]

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
- ☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W _s	Water seep
E	Environmental sample	W _l	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)





TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.1 AHD
EASTING: 332198.9
NORTHING: 6296954.6

PIT No: 239
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169	0.1	FILL/Gravelly SAND: coarse grained, grey, with organics, gravels subangular roadbase, trace asphalt <20mm, wet, fill		D/E	0.05		PID<1ppm					
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.2		PID<1ppm					
	0.3	Pit discontinued at 0.3m- Limit of Investigation										
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2



SAMPLING & IN SITU TESTING LEGEND					
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	W	Water seep	sp	Standard penetration test
E	Environmental sample	W	Water level	S	Shear vane (kPa)

TEST PIT LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Tourist and Hotel Development
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.0 AHD
EASTING: 332190.5
NORTHING: 6296958.3

PIT No: 240
PROJECT No: 202936.02
DATE: 11/3/2022
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Dynamic Penetrometer Test (blows per mm)			
				Type	Depth	Sample	Results & Comments		5	10	15	20
169	0.1	FILL/Gravelly SAND: coarse grained, grey, with organics, gravels subangular roadbase, trace asphalt <20mm, wet, fill		D/E	0.05		PID<1ppm					
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.2		PID<1ppm					
	0.4	Pit discontinued at 0.4m- Limit of Investigation										
168	1											
167	2											

RIG: KOBLECO 5T Excavator

LOGGED: MJH

SURVEY DATUM: MGA94 Zone 56 H

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

- ☐ Sand Penetrometer AS1289.6.3.3
☐ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND			
A	Auger sample	G	Gas sample
B	Bulk sample	P	Piston sample
BLK	Block sample	U	Tube sample (x mm dia.)
C	Core drilling	W	Water sample
D	Disturbed sample	W	Water seep
E	Environmental sample	W	Water level
		PID	Photo ionisation detector (ppm)
		PL(A)	Point load axial test Is(50) (MPa)
		PL(D)	Point load diametral test Is(50) (MPa)
		pp	Pocket penetrometer (kPa)
		S	Standard penetration test
		V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 170.3 AHD
EASTING: 332234.9
NORTHING: 6296947.7
DIP/AZIMUTH: 90°/--

BORE No: 126
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
170	0.15	FILL/Silty SAND: medium plasticity, grey brown, trace metal, trace plastic, trace concrete, trace clay, moist, fill		D/E	0.1		PID<1ppm			
		Clayey SAND: medium grained, yellow brown, moist, residual		D/E	0.3		PID<1ppm			
		- from 0.4m: Clayey SAND/Sandy CLAY								
0.6		Bore discontinued at 0.6m- Limit of Investigation								
1										
169										
2										
168										

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.7 AHD
EASTING: 332236.1
NORTHING: 6296924.3
DIP/AZIMUTH: 90°/--

BORE No: 127
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
169	0.15	FILL/GRAVEL: poorly graded, grey and pale grey, gravel subangular igneous basalt and subangular asphalt <30mm, moist, fill - from 0.05m: gravel is predominately composed of angular oyster shell fragments (Calcareous)		D/E	0.1		PID<1ppm			
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.25		PID<1ppm			
		- from 0.4m: Clayey SAND/Sandy CLAY								
0.6		Bore discontinued at 0.6m- Limit of Investigation								
1										
168										
2										

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.4 AHD
EASTING: 332209.4
NORTHING: 6296913.7
DIP/AZIMUTH: 90°/--

BORE No: 128
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
168	0.3	FILL/Gravelly SAND: poorly graded, grey and slightly pale grey, gravels subangular igneous basalt, subangular asphalt <30mm, with angular oyster shell fragments <5mm, dry, fill		D/E	0.1		PID<1ppm			
	0.3	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.5		PID<1ppm			
0.8		Bore discontinued at 0.8m- Limit of Investigation								
1										
167										
2										
166										

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND




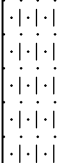
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 168.9 AHD
EASTING: 332198.1
NORTHING: 6296929.9
DIP/AZIMUTH: 90°/--

BORE No: 129
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
168	0.15	FILL/Sandy GRAVEL: poorly graded, grey, gravels subangular asphalt and subangular igneous basalt as dark grey brown, with silt, with rootlets, moist, fill		D/E	0.1		PID<1ppm			
		FILL: Clayey SAND/Sandy CLAY: medium grained, low plasticity, yellow brown and grey brown, moist, fill (reworked natural material most likely from cut side of tennis court)		D/E	0.3		PID<1ppm			
	0.6	FILL/Gravelly Silty SAND: poorly graded, grey and slightly pale grey, gravels angular oyster shell fragments <10mm, moist, fill		D/E	0.65		PID<1ppm			
	0.7	Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.8		PID<1ppm			
	1	1.0	Bore discontinued at 1.0m- Limit of Investigation							
167	2									

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND


A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 169.4 AHD
EASTING: 332223.1
NORTHING: 6296933.4
DIP/AZIMUTH: 90°/--

BORE No: 130
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
169	0.1	FILL/Gravelly Clayey SAND: medium grained, brown and pale grey, gravels angular oyster shell fragments, trace rootlets, moist, fill		D/E	0.05		PID<1ppm			
		Silty SAND: fine to medium grained, brown and grey brown, with organics, moist, topsoil		D/E	0.3		PID<1ppm			
0.6		Bore discontinued at 0.6m- Limit of Investigation								
1										
168										
2										
167										

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: No free groundwater observed

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 167.1 AHD
EASTING: 332175.4
NORTHING: 6296911.2
DIP/AZIMUTH: 90°/--

BORE No: 131
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
167	0.2	FILL/Silty SAND: medium grained, grey, trace glass (bottles), trace rootlets, metal (pipe/rebar), trace sandstone gravels, moist to wet, fill		D/E	0.1		PID<1ppm			
		Silty SAND: fine grained, grey brown, with rootlets, wet, alluvial		D/E	0.3		PID<1ppm			
		- at 0.5m: seepage								
		- approximately 0.7m: hydrogen sulfide odour		D/E	0.7		PID<1ppm			
166	0.8	Bore discontinued at 0.8m- Limit of Investigation								
165	1									
	2									

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: Free groundwater observed at 0.7m depth

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

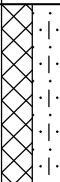
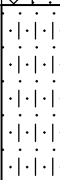
A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)

BOREHOLE LOG

CLIENT: The Trustee for Mount White Trust
PROJECT: Proposed Hotel and Conference Centre
LOCATION: 231 Pacific Highway, Mount White

SURFACE LEVEL: 166.8 AHD
EASTING: 332184.1
NORTHING: 6296882.3
DIP/AZIMUTH: 90°/--

BORE No: 133
PROJECT No: 202936.01
DATE: 15/10/2021
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing				Water	Well Construction Details	
				Type	Depth	Sample	Results & Comments			
		FILL/Silty SAND: medium grained, grey, with angular oyster shells, wet, fill		D/E	0.1		PID<1ppm			
	0.3	Silty SAND: fine grained, grey brown, wet, alluvial								
	0.6	Bore discontinued at 0.6m- Limit of Investigation		D/E	0.6		PID<1ppm			
166										
1										
165										
2										

RIG: Utility Mounted Rig

DRILLER: MJH

LOGGED: MJH

CASING:

TYPE OF BORING: 60mm diameter Push Tube Sampler

WATER OBSERVATIONS: Free groundwater observed at 0.5m depth

REMARKS: Location coordinates are in MGA94 Zone 56 H.

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	>	Water seep	S	Standard penetration test
E	Environmental sample	≡	Water level	V	Shear vane (kPa)



Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thin-walled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the in-situ soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low

reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

- In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:
4,6,7
N=13
- In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:
15, 30/40 mm

Sampling Methods

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer - a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer - a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.



Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are generally based on Australian Standard AS1726:2017, Geotechnical Site Investigations. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	19 - 63
Medium gravel	6.7 - 19
Fine gravel	2.36 - 6.7
Coarse sand	0.6 - 2.36
Medium sand	0.21 - 0.6
Fine sand	0.075 - 0.21

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

The proportions of secondary constituents of soils are described as follows:

In fine grained soils (>35% fines)

Term	Proportion of sand or gravel	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	>30%	Sandy Clay
With	15 - 30%	Clay with sand
Trace	0 - 15%	Clay with trace sand

In coarse grained soils (>65% coarse)

- with clays or silts

Term	Proportion of fines	Example
And	Specify	Sand (70%) and Clay (30%)
Adjective	>12%	Clayey Sand
With	5 - 12%	Sand with clay
Trace	0 - 5%	Sand with trace clay

In coarse grained soils (>65% coarse)

- with coarser fraction

Term	Proportion of coarser fraction	Example
And	Specify	Sand (60%) and Gravel (40%)
Adjective	>30%	Gravelly Sand
With	15 - 30%	Sand with gravel
Trace	0 - 15%	Sand with trace gravel

The presence of cobbles and boulders shall be specifically noted by beginning the description with 'Mix of Soil and Cobbles/Boulders' with the word order indicating the dominant first and the proportion of cobbles and boulders described together.

Soil Descriptions

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	VS	<12
Soft	S	12 - 25
Firm	F	25 - 50
Stiff	St	50 - 100
Very stiff	VSt	100 - 200
Hard	H	>200
Friable	Fr	-

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	Density Index (%)
Very loose	VL	<15
Loose	L	15-35
Medium dense	MD	35-65
Dense	D	65-85
Very dense	VD	>85

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Extremely weathered material – formed from in-situ weathering of geological formations. Has soil strength but retains the structure or fabric of the parent rock;
- Alluvial soil – deposited by streams and rivers;

- Estuarine soil – deposited in coastal estuaries;
- Marine soil – deposited in a marine environment;
- Lacustrine soil – deposited in freshwater lakes;
- Aeolian soil – carried and deposited by wind;
- Colluvial soil – soil and rock debris transported down slopes by gravity;
- Topsoil – mantle of surface soil, often with high levels of organic material.
- Fill – any material which has been moved by man.

Moisture Condition – Coarse Grained Soils

For coarse grained soils the moisture condition should be described by appearance and feel using the following terms:

- Dry (D) Non-cohesive and free-running.
- Moist (M) Soil feels cool, darkened in colour.
Soil tends to stick together.
Sand forms weak ball but breaks easily.
- Wet (W) Soil feels cool, darkened in colour.
Soil tends to stick together, free water forms when handling.

Moisture Condition – Fine Grained Soils

For fine grained soils the assessment of moisture content is relative to their plastic limit or liquid limit, as follows:

- 'Moist, dry of plastic limit' or 'w < PL' (i.e. hard and friable or powdery).
- 'Moist, near plastic limit' or 'w ≈ PL' (i.e. soil can be moulded at moisture content approximately equal to the plastic limit).
- 'Moist, wet of plastic limit' or 'w > PL' (i.e. soils usually weakened and free water forms on the hands when handling).
- 'Wet' or 'w ≈ LL' (i.e. near the liquid limit).
- 'Wet' or 'w > LL' (i.e. wet of the liquid limit).

Symbols & Abbreviations

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Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

C	Core drilling
R	Rotary drilling
SFA	Spiral flight augers
NMLC	Diamond core - 52 mm dia
NQ	Diamond core - 47 mm dia
HQ	Diamond core - 63 mm dia
PQ	Diamond core - 81 mm dia

Water

▷	Water seep
▽	Water level

Sampling and Testing

A	Auger sample
B	Bulk sample
D	Disturbed sample
E	Environmental sample
U ₅₀	Undisturbed tube sample (50mm)
W	Water sample
pp	Pocket penetrometer (kPa)
PID	Photo ionisation detector
PL	Point load strength Is(50) MPa
S	Standard Penetration Test
V	Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

B	Bedding plane
Cs	Clay seam
Cv	Cleavage
Cz	Crushed zone
Ds	Decomposed seam
F	Fault
J	Joint
Lam	Lamination
Pt	Parting
Sz	Sheared Zone
V	Vein

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

h	horizontal
v	vertical
sh	sub-horizontal
sv	sub-vertical

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

ca	calcite
cbs	carbonaceous
cly	clay
fe	iron oxide
mn	manganese
slt	silty

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General



Asphalt



Road base



Concrete



Filling

Soils



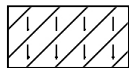
Topsoil



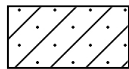
Peat



Clay



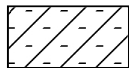
Silty clay



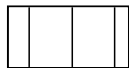
Sandy clay



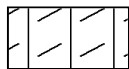
Gravelly clay



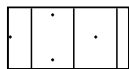
Shaly clay



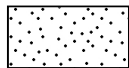
Silt



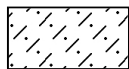
Clayey silt



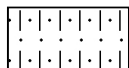
Sandy silt



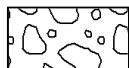
Sand



Clayey sand



Silty sand



Gravel



Sandy gravel



Cobbles, boulders



Talus

Sedimentary Rocks



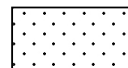
Boulder conglomerate



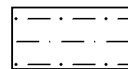
Conglomerate



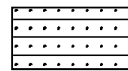
Conglomeratic sandstone



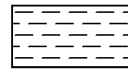
Sandstone



Siltstone



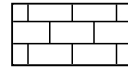
Laminite



Mudstone, claystone, shale

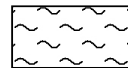


Coal

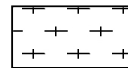


Limestone

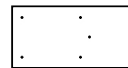
Metamorphic Rocks



Slate, phyllite, schist

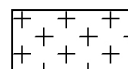


Gneiss

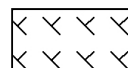


Quartzite

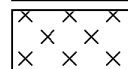
Igneous Rocks



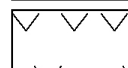
Granite



Dolerite, basalt, andesite



Dacite, epidote



Tuff, breccia



Porphyry

Appendix D

Site Assessment Criteria

Appendix D

Site Assessment Criteria

D1.0 Introduction

D1.1 Guidelines

The following key guidelines were consulted for deriving the site assessment criteria (SAC):

- NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM] (NEPC, 2013).
- CRC CARE *Health screening levels for petroleum hydrocarbons in soil and groundwater* (CRC CARE, 2011).

D1.2 General

The SAC applied in the current investigation were informed by the CSM which identified human and environmental receptors to potential contamination at the site. Analytical results were assessed (as a Tier 1 assessment) against the SAC comprising primarily the investigation and screening levels of Schedule B1 of NEPC (2013).

The following inputs are relevant to the selection and/or derivation of the SAC:

- Land use: Residential A.
 - With reference to Schedule B7 of NEPM, which states that a more sensitive land use criteria should be considered for hotel developments.
- Soil type: sand (based on dominant soil type – see Logs, Appendix C).

D2.0 Soils

D2.1 Health Investigation and Screening Levels

The generic health investigation levels (HIL) and health screening levels (HSL) are considered to be appropriate for the assessment of human health risk via all relevant pathways of exposure associated with contamination at the site. The adopted soil HIL and HSL for the contaminants of concern are in Table D1 and Table D2.

Table D1: Health Investigation Levels (mg/kg)

Contaminant	HIL-A
Metals	
Arsenic	100
Cadmium	20
Chromium (VI)	100
Copper	6000
Lead	300
Mercury (inorganic)	40
Nickel	400
Zinc	7400
PAH	
B(a)P TEQ	3
Total PAH	300
OCP	
DDT+DDE+DDD	240
Aldrin and dieldrin	6
Chlordane	50
Endosulfan	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
OPP	
Chlorpyrifos	160
PCB	
PCB	1

Table D2: Health Screening Levels (mg/kg)

Contaminant	HSL-A&B
SAND	0 m to <1 m
Benzene	0.5
Toluene	160
Ethylbenzene	55
Xylenes	40
Naphthalene	3
TRH F1	45
TRH F2	110

Notes: TRH F1 is TRH C₆-C₁₀ minus BTEX

TRH F2 is TRH >C₁₀-C₁₆ minus naphthalene

The soil saturation concentration (C_{sat}) is defined as the soil concentration at which the porewater phase cannot dissolve any more of an individual chemical. The soil vapour that is in equilibrium with the porewater will be at its maximum. If the derived soil HSL exceeds C_{sat}, a soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario. For these scenarios, no HSL is presented for these chemicals and the HSL is shown as 'not limiting' or 'NL'

The HSL for direct contact derived from CRC CARE (2011) are in Table D3.

Table D3: Health Screening Levels for Direct Contact (mg/kg)

Contaminant	DC HSL-A
Benzene	100
Toluene	14 000
Ethylbenzene	4500
Xylenes	12 000
Naphthalene	1400
TRH F1	4400
TRH F2	3300
TRH F3	4500
TRH F4	6300

Notes: TRH F1 is TRH C₆-C₁₀ minus BTEX

TRH F2 is TRH >C₁₀-C₁₆ minus naphthalene

D2.2 Asbestos in Soil

The HSL for asbestos in soil are based on likely exposure levels for different scenarios published in NEPC (2013) for the following forms of asbestos:

- Bonded asbestos containing material (ACM); and
- Fibrous asbestos and asbestos fines (FA and AF).

The HSL are in Table D4.

Table D4: Health Screening Levels for Asbestos

Form of Asbestos	HSL-A
ACM	0.01%
FA and AF	0.001%
FA and AF and ACM	No visible asbestos for surface soil *

Notes: Surface soils defined as top 10 cm.

* Based on site observations at the sampling points and the analytical results of surface samples.

D2.3 Ecological Investigation Levels

Ecological investigation levels (EIL) and added contaminant limits (ACL), where appropriate, have been derived in NEPC (2013) for arsenic, copper, chromium (III), nickel, lead, zinc, DDT and naphthalene. The adopted EIL, derived using the interactive (excel) calculation spreadsheet on the NEPM toolbox website are shown in Table D6 with inputs into their derivation shown in Table D5.

Table D5: Inputs to the Derivation of the Ecological Investigation Levels

Variable	Input	Rationale
Age of contaminants	"Aged" (>2 years)	Given the likely source of soil contaminants (i.e. historical site use / fill), the contamination is considered as "aged"
pH	7.0	Based on the average of three samples (DP, 2021)
CEC	5 cmol _c /kg	DP notes the average CEC (DP, 2021) result was 2.9 cmol _c /kg, however, DP have opted to use the lowest CEC value given in Table 1B(1) of NEPC (2013) instead
Clay content	1%	Consistent with a 'sand' soil type
Traffic volumes	high	The site is located adjacent the Pacific Highway
State / Territory	NSW	The site is located in NSW

Table D6: Ecological Investigation Levels (mg/kg)

Contaminant	EIL-A-B-C
Metals	
Arsenic	100
Copper	120
Nickel	35
Chromium III	200
Lead	1100
Zinc	350
PAH	
Naphthalene	170
OCP	
DDT	180

EIL-A-B-C urban residential and public open space

D2.4 Ecological Screening Levels

Ecological screening levels (ESL) are used to assess the risk of selected petroleum hydrocarbon compounds, BTEX and benzo(a)pyrene to terrestrial ecosystems. The adopted ESL are shown in Table D7.

Table D7: Ecological Screening Levels (mg/kg)

Contaminant	Soil Type	EIL-A-B-C
Benzene	Coarse	50
Toluene	Coarse	85
Ethylbenzene	Coarse	70
Xylenes	Coarse	105
TRH F1	Coarse/ Fine	180*
TRH F2	Coarse/ Fine	120*
TRH F3	Coarse	300
TRH F4	Coarse	2800
B(a)P	Coarse	0.7

Notes: ESL are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability
 TRH F1 is TRH C₆-C₁₀ minus BTEX
 TRH F2 is TRH >C₁₀-C₁₆ including naphthalene
 EIL-A-B-C urban residential and public open space

D2.5 Management Limits

In addition to appropriate consideration and application of the HSL and ESL, there are additional considerations which reflect the nature and properties of petroleum hydrocarbons, including:

- Formation of observable light non-aqueous phase liquids (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure eg: penetration of, or damage to, in-ground services.

The adopted management limits are in Table D8.

Table D8: Management Limits (mg/kg)

Contaminant	Soil Type	ML-A-B-C
TRH F1	Coarse	700
TRH F2	Coarse	1000
TRH F3	Coarse	2500
TRH F4	Coarse	10 000

Notes: TRH F1 is TRH C₆-C₁₀ including BTEX
TRH F2 is TRH >C₁₀-C₁₆ including naphthalene
ML-A-B-C residential, parkland and public open space

Appendix E

Field Work Methodology

Appendix E

Field Work Methodology

E1.0 Guidelines

The following key guideline was consulted for the field work methodology:

- NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM] (NEPC, 2013).

E2.0 Field Work

Field work as part of the current SCI was undertaken on 9 and 11 March 2022 by a DP engineering geologist and environmental scientist. The field work comprised the excavation of 40 test pits (Pits 201 to 240) using a 5-tonne excavator to depths terminating in natural soils (or prior refusal).

E3.0 Soil Sampling

Soil sampling was carried out in accordance with DP standard operating procedures. The general sampling and sample management procedures comprised:

- Collection of soil samples directly from the excavator bucket at the nominated sample depth;
- Use of disposable nitrile gloves when collecting all samples. Gloves were replaced prior to the collection of each sample thereby minimising potential for cross-contamination;
- Transfer of samples into laboratory-prepared glass jars with Teflon lined lids by hand, capping immediately and minimising headspace within the sample jar;
- Collection of ~500 ml samples for FA and AF analysis (from Pits 201 to 220);
- Collection of bulk (~10 L) soil samples for ACM field sieve test (from Pits 201 to 220);
- Collection of replicate samples in zip-lock bags for PID screening;
- Sample containers were labelled with individual and unique identification including project number, sample location and sample depth (where applicable);
- Placement of samples into a cooled, insulated and sealed container for transport to the laboratory; and
- Use chain of custody documentation

E3.1 Field Testing

Field testing was carried out in accordance with DP standard operating procedures. The general sampling and sample management procedures comprised:

PID Field Test

- Calibrate the PID with isobutylene gas at 100 ppm and with fresh air prior to commencement of each successive day's field work;
- Allow the headspace in the PID zip-lock bag samples to equilibrate; and
- Screen using the PID.

Assessment of Subsurface ACM

- Collect at least one bulk (~10 L) soil sample per layer of fill from each test pit;
- Weigh each bulk sample;
- Screen each bulk sample through a ≤ 7 mm aperture sieve;
- Weigh all retrieved potential ACM fragments; and
- Calculate the asbestos concentration (% w/w) in soil as per the procedure described in NEPC (2013).

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Appendix F

Data Quality Objectives

Appendix F

Data Quality Objectives

F1.0 Data Quality Objectives

The DSI has been devised broadly in accordance with the seven-step data quality objective (DQO) process which is provided in Appendix B, Schedule B2 of NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* [NEPM] (NEPC, 2013).

Step	Summary
1: State the problem	<p>The overall objective of the investigation was to confirm the contamination status of the site with respect to the proposed land use. The investigation was undertaken as the land is to be re-developed.</p> <p>DP has previously prepared a detailed site (contamination) investigation (DSI – DP, 2021) for the site, which commented that the site could be made suitable for the proposed development (from a site contamination standpoint), subject to the completion of a supplementary contamination investigation to further characterise and delineate the extent of contamination within part of PAEC 1. It is noted that the proposed development has been revised since the completion of the DSI.</p> <p>The objective of the current investigation was therefore to delineate the extent of contamination within the locality of Bores 128, 129 and 131 (within PAEC 1), and to comment on the need for further investigation and/or management with regard to the proposed development. It is understood that the report will be used to support a planning proposal for the proposed development.</p> <p>A preliminary conceptual site model (CSM) has been prepared (Section 8) for the site.</p>
2: Identify the decisions / goal of the study	<p>The site history has identified possible contaminating previous uses which are identified in the CSM (Section 8). The CSM identified the associated contaminants of potential concern (COPC) and the likely impacted media. The site assessment criteria (SAC) for each of the COPC are detailed in Appendix D.</p> <p>The decision is to establish whether or not the results fall below the SAC or whether or not the 95% upper confidence limit of the sample population falls below the SAC. On this basis, an assessment of the site's suitability from a contamination perspective and whether (or not) further assessment and / or remediation is required will be derived.</p>
3: Identify the information inputs	<p>The inputs to the investigation include;</p> <ul style="list-style-type: none"> Review of DP (2021) and re-assessment of results against the current SAC; Observations made during the site walkover (see Section 7); The lithology of the site as described in the logs and field observations (see Section 11.1);

Step	Summary
3: Identify the information inputs (continued)	<ul style="list-style-type: none"> • Photoionization detector (PID) readings, used on-site to screen soils for VOC, and used to inform sample selection for laboratory analysis; • Laboratory results of samples, analysed using NATA accredited laboratories and methods, where possible; • Field and laboratory QA/QC data (see Appendix G); and • Adopted SAC (see Appendix D).
4: Define the study boundaries	<p>The lateral boundaries of the investigation area are shown on Drawing 1, Appendix A (i.e. part of PAEC 1). The vertical boundaries are to the extent of contamination impact as determined from the site history assessment and site observations.</p> <p>The assessment is limited to the timeframe / period over which the field investigation was undertaken.</p>
5: Develop the analytical approach (or decision rule)	<ul style="list-style-type: none"> • The decision rule is to compare all analytical results with the SAC (Appendix D) based on NEPC (2013); • Where a sample result exceeds the adopted criterion, a further site-specific assessment will be made as to the risk posed by the presence of that contaminant(s); • Initial comparisons will be with individual results then, where required, summary statistics (including mean, standard deviation and 95% upper confidence limit (UCL) of the arithmetic mean (95% UCL) to assess potential risks posed by the site contamination; • Quality control results are to be assessed according to their relative percent difference (RPD) values. For field duplicates, triplicates and laboratory results, RPDs should generally be below 30%. The field and laboratory quality assurance assessment is included in Appendix G.
6: Specify the performance or acceptance criteria	<p>Baseline condition: Contaminants at the site and/or statistical analysis of data (in line with NEPC (2013)) exceed human health and environmental SAC and pose a potentially unacceptable risk to receptors (null hypothesis).</p> <p>Alternative condition: Contaminants at the site and statistical analysis of data (in line with NEPC (2013)) comply with human health and environmental SAC and as such, do not pose a potentially unacceptable risk to receptors (alternative hypothesis).</p> <p>Unless conclusive information from the collected data is sufficient to reject the null hypothesis, it is assumed that the baseline condition is true.</p>
7: Optimise the design for obtaining data	<p>Sampling design and procedures that were implemented to optimise data collection for achieving the DQOs included the following:</p> <ul style="list-style-type: none"> • Suitably experienced engineers and scientists were chosen to conduct field work and sample analysis interpretation; • Professional judgement to identify and sample potentially affected areas; and • Only NATA accredited laboratories using NATA endorsed methods were used to perform laboratory analysis whenever possible. <p>Further details regarding the adopted sampling plan are presented in Section 9 of the report.</p>

Douglas Partners Pty Ltd

Appendix G

Quality Assurance / Quality Control

Appendix G

Quality Assurance / Quality Control

G1.0 Field and Laboratory Data Quality Assurance and Quality Control

The field and laboratory data quality assurance and quality control (QA/QC) procedures and results are summarised in the following Table G1. Reference should be made to the field work methodology and the laboratory results / certificates of analysis for further details. The relative percentage difference (RPD) results are included at the end of this appendix. Reference should be made to DP (2021) for a summary of the DSI QA/QC results.

Table G1: Field and Laboratory Quality Control

Item	Evaluation / Acceptance Criteria	Compliance
Analytical laboratories used	NATA accreditation	C*
Holding times	Various based on type of analysis	C**
Intra-laboratory replicates	5% of primary samples; <30% RPD	PC (See Section G1.1)
Inter-laboratory replicates	5% of primary samples; <30% RPD	C
Rinsates	1 per sampling event; <PQL	C
Laboratory / Reagent Blanks	1 per batch; <PQL	C
Laboratory Duplicate	1 per lab batch; As laboratory certificate	PC (See Section G1.2)
Matrix Spikes	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Surrogate Spikes	All organics analysis; 70-130% recovery (inorganics); 60-140% recovery (organics)	PC (See Section G1.2)
Control Samples	1 per lab batch; 70-130% recovery (inorganics); 60-140% recovery (organics)	C
Standard Operating Procedures (SOP)	Adopting SOP for all aspects of the sampling field work	C

Notes:

C = compliance; PC = partial compliance; NC = non-compliance

* It is noted that the asbestos analysis (FA/AF analysis) is reported outside the scope of NATA accreditation.

** All contaminants of concern were analysed within the holding times.

G1.1 Replicate Analysis

The RPD results were all within the acceptable range, with the exception of those indicated in bold in Table QA1 and QA2. The exceedances are not, however, considered to be of concern given that:

- The typically low actual differences in the concentrations of the replicate pairs where some RPD exceedances occurred;
- The number of replicate pairs being collected from fill soils which by its nature is heterogeneous;
- Replicates, rather than homogenised duplicates, were used to minimise risk of volatile loss, hence greater variability can be expected;
- The majority of RPDs within a replicate pair being within the acceptable limits; and
- All other QA/QC parameters met the DQIs.

G1.2 Additional Laboratory Comments

The following comments were made in the laboratory reports:

- PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of samples 291049-11, 11d.
- TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate is not possible to report as the high concentration of analytes in samples 291049-1,1d,6 have caused interference

G1.3 Summary

In summary, the QC data is determined to be of sufficient quality to be considered acceptable for the assessment.

G2.0 Data Quality Indicators

The reliability of field procedures and analytical results was assessed against the following data quality indicators (DQIs) as outlined in NEPC *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM]* (NEPC, 2013):

- Completeness: a measure of the amount of usable data from a data collection activity;
- Comparability: the confidence (qualitative) that data may be considered to be equivalent for each sampling and analytical event;
- Representativeness: the confidence (qualitative) of data representativeness of media present on-site;
- Precision: a measure of variability or reproducibility of data; and
- Accuracy: a measure of closeness of the data to the 'true' value.

Table G2: Data Quality Indicators

Data Quality Indicator	Method(s) of Achievement
Completeness	Systematic and selected target locations sampled.
	Preparation of logs, sample location plan and chain of custody records.
	Laboratory sample receipt information received confirming receipt of samples intact and appropriateness of the chain of custody.
	Samples analysed for contaminants of potential concern (COPC) identified in the Conceptual Site Model (CSM).
	Completion of chain of custody (COC) documentation.
	NATA accredited laboratory results certificates provided by the laboratory.
	Satisfactory frequency and results for field and laboratory quality control (QC) samples as discussed in Section 1.
Comparability	Using appropriate techniques for sample recovery, storage and transportation, which were the same for the duration of the project.
	Experienced sampler(s) used.
	Use of NATA registered laboratories, with test methods the same or similar between laboratories.
	Satisfactory results for field and laboratory QC samples.
Representativeness	Target media sampled.
	Sample numbers recovered and analysed are considered to be representative of the target media and complying with DQOs.
	Samples were extracted and analysed within holding times.
	Samples were analysed in accordance with the COC.
Precision	Field staff followed standard operating procedures.
	Acceptable RPD between original samples and replicates (see Section G1.1).
	Satisfactory results for all other field and laboratory QC samples.
Accuracy	Field staff followed standard operating procedures.
	Satisfactory results for all field and laboratory QC samples.

Based on the above, it is considered that the DQIs have been generally complied with.

G3.0 Conclusion

Based on the results of the field QA and field and laboratory QC, and evaluation against the DQIs it is concluded that the field and laboratory test data obtained are reliable and useable for this assessment.

Table QA1: Relative Percentage Difference Results – Intra-laboratory Replicates

			TRH						BTEX				PAH			
			TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene ^b	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
QA1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	540	580	<0.2	<0.5	<1	<1	<0.1	0.52	0.7	3.6
222/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	410	380	<0.2	<0.5	<1	<1	<0.1	0.79	1.4	11
		Difference	0	0	0	0	130	200	0	0	0	0	0	0.27	0.7	7.4
		RPD	0%	0%	0%	0%	27%	42%	0%	0%	0%	0%	0%	41%	67%	101%
QA3	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	470	290	<0.2	<0.5	<1	<1	<0.1	16	22	120
226/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	360	240	<0.2	<0.5	<1	<1	<0.1	5.1	9.6	85
		Difference	0	0	0	0	110	50	0	0	0	0	0	10.9	12.4	35
		RPD	0%	0%	0%	0%	27%	19%	0%	0%	0%	0%	0%	103%	78%	34%

Table QA2: Relative Percentage Difference Results – Intra-laboratory Replicates

			TRH						BTEX			
			TRH C6 - C10	TRH >C10-C16	F1 ((C6-C10)-BTEX)	F2 (>C10-C16 less Naphthalene)	F3 (>C16-C34)	F4 (>C34-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
QA4	0 - 0.1 m	11/03/2022	<10	<50	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5
227/0.1	0 - 0.1 m	11/03/2022	<25	<50	<25	<50	<100	<100	<0.2	<0.5	<1	<1
		Difference	0	0	0	0	0	0	0	0	0	0
		RPD	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Douglas Partners Pty Ltd

Appendix H

Laboratory Certificates of Analysis and Chain-of-Custody Documentation

CERTIFICATE OF ANALYSIS 280737

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	<u>202936.01, Mount White</u>
Number of Samples	55 Soil, 1 Water
Date samples received	20/10/2021
Date completed instructions received	20/10/2021

Analysis Details

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

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

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

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

Report Details

Date results requested by	27/10/2021
Date of Issue	27/10/2021
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Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Panika Wongchanda
 Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Dragana Tomas, Senior Chemist
 Hannah Nguyen, Metals Supervisor
 Josh Williams, LC Supervisor
 Lucy Zhu, Asbestos Supervisor
 Priya Samarawickrama, Senior Chemist
 Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	90	91	91	97	87

vTRH(C6-C10)/BTEXN in Soil

Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	96	85	91	76	77

vTRH(C6-C10)/BTEXN in Soil

Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	75	86	80	89	91

vTRH(C6-C10)/BTEXN in Soil

Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	91	93	82	94	98

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		280737-53	280737-54
Your Reference	UNITS	QA1	QA2
Depth		0.00-0.10	0.00-0.10
Date Sampled		14/10/2021	14/10/2021
Type of sample		Soil	Soil
Date extracted	-	21/10/2021	21/10/2021
Date analysed	-	25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	89	103

svTRH (C10-C40) in Soil

Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	23/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	230
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	450
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	680
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	540
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	440
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	980
Surrogate o-Terphenyl	%	81	81	80	79	82

svTRH (C10-C40) in Soil

Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	23/10/2021	22/10/2021	23/10/2021	22/10/2021	22/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	2,100	<100	730	<100	100
TRH C ₂₉ - C ₃₆	mg/kg	2,100	<100	680	<100	130
Total +ve TRH (C10-C36)	mg/kg	4,200	<50	1,400	<50	230
TRH >C ₁₀ -C ₁₆	mg/kg	72	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	72	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	3,700	<100	1,200	<100	200
TRH >C ₃₄ -C ₄₀	mg/kg	1,400	<100	510	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	5,200	<50	1,700	<50	200
Surrogate o-Terphenyl	%	94	79	88	81	83

svTRH (C10-C40) in Soil

Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	78	76	77	76	77

svTRH (C10-C40) in Soil

Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	23/10/2021	22/10/2021	23/10/2021	23/10/2021	23/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	300	<100	470	160	290
Total +ve TRH (C10-C36)	mg/kg	300	<50	470	160	290
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	270	<100	390	120	240
TRH >C ₃₄ -C ₄₀	mg/kg	400	<100	680	240	420
Total +ve TRH (>C10-C40)	mg/kg	670	<50	1,100	370	670
Surrogate o-Terphenyl	%	79	76	82	78	79

svTRH (C10-C40) in Soil			
Our Reference		280737-53	280737-54
Your Reference	UNITS	QA1	QA2
Depth		0.00-0.10	0.00-0.10
Date Sampled		14/10/2021	14/10/2021
Type of sample		Soil	Soil
Date extracted	-	21/10/2021	21/10/2021
Date analysed	-	23/10/2021	23/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	76	76

PAHs in Soil						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.7
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.3	11
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	11
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	8.6
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.2	9.7
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	17
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.1	11
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	6.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.8
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	8.4
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	1.1	89
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	16
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	16
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	16
Surrogate p-Terphenyl-d14	%	88	87	96	97	93

PAHs in Soil						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	0.5	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	2.1	<0.1	1.3	<0.1	1.3
Acenaphthene	mg/kg	12	<0.1	3.6	<0.1	0.3
Fluorene	mg/kg	11	<0.1	3.8	<0.1	0.6
Phenanthrene	mg/kg	98	<0.1	31	<0.1	3.6
Anthracene	mg/kg	24	<0.1	9.9	<0.1	1.2
Fluoranthene	mg/kg	230	0.1	91	0.1	11
Pyrene	mg/kg	190	<0.1	75	<0.1	9.5
Benzo(a)anthracene	mg/kg	110	<0.1	47	<0.1	4.9
Chrysene	mg/kg	120	<0.1	50	<0.1	5.7
Benzo(b,j+k)fluoranthene	mg/kg	160	<0.2	86	<0.2	8.5
Benzo(a)pyrene	mg/kg	85	0.08	45	0.07	5.2
Indeno(1,2,3-c,d)pyrene	mg/kg	51	<0.1	26	<0.1	3.9
Dibenzo(a,h)anthracene	mg/kg	14	<0.1	6.3	<0.1	0.8
Benzo(g,h,i)perylene	mg/kg	65	<0.1	31	0.1	3.6
Total +ve PAH's	mg/kg	1,200	0.2	510	0.3	60
Benzo(a)pyrene TEQ calc (zero)	mg/kg	130	<0.5	68	<0.5	7.8
Benzo(a)pyrene TEQ calc(half)	mg/kg	130	<0.5	68	<0.5	7.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	130	<0.5	68	<0.5	7.8
Surrogate p-Terphenyl-d14	%	108	103	94	100	104

PAHs in Soil						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.07	<0.05	0.09	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.2	<0.05	0.4	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	96	92	96	95	92

PAHs in Soil						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.6	0.3	<0.1	<0.1
Pyrene	mg/kg	<0.1	0.5	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.3	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.6	0.4	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.3	0.2	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	2.9	2.0	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	90	90	90	84

Organochlorine Pesticides in soil						
Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	83	77	79	77

Organochlorine Pesticides in soil						
Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	76	79	79	75	76

Organochlorine Pesticides in soil						
Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	75	78	76	74	73

Organochlorine Pesticides in soil						
Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	72	70	84	83	83

Organochlorine Pesticides in soil						
Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	81	87	88	84

Organochlorine Pesticides in soil						
Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	85	81	87	89

Organochlorine Pesticides in soil						
Our Reference		280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference	UNITS	129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	84	87	83	89

Organochlorine Pesticides in soil						
Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	83	84	84

Organochlorine Pesticides in soil						
Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	81	83	79	76

Organochlorine Pesticides in soil						
Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	81	82	80	77

Organochlorine Pesticides in soil					
Our Reference		280737-51	280737-52	280737-54	280737-55
Your Reference	UNITS	146/0.1	147/0.1	QA2	QA3
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	80	81	80	78

Organophosphorus Pesticides in Soil						
Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	83	77	79	77

Organophosphorus Pesticides in Soil						
Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	76	79	79	75	76

Organophosphorus Pesticides in Soil						
Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	75	78	76	74	73

Organophosphorus Pesticides in Soil						
Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	72	70	84	83	83

Organophosphorus Pesticides in Soil						
Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	84	81	87	88	84

Organophosphorus Pesticides in Soil						
Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	85	81	87	89

Organophosphorus Pesticides in Soil						
Our Reference	UNITS	280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference		129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	84	87	83	89

Organophosphorus Pesticides in Soil						
Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	86	83	84	84

Organophosphorus Pesticides in Soil						
Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	83	81	83	79	76

Organophosphorus Pesticides in Soil						
Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	81	82	80	77

Organophosphorus Pesticides in Soil			
Our Reference		280737-51	280737-52
Your Reference	UNITS	146/0.1	147/0.1
Depth		0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021
Type of sample		Soil	Soil
Date extracted	-	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	80	81

PCBs in Soil						
Our Reference	UNITS	280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference		105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	77	76	83	86	85

PCBs in Soil						
Our Reference	UNITS	280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference		128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	81	89	86	87	89

PCBs in Soil						
Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	1.2	3.0	1.6
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	1.2	3.0	1.6
Surrogate TCMX	%	86	83	84	84	81

PCBs in Soil						
Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Aroclor 1016	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.6	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	0.3	<0.6	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	0.3	<0.6	<0.1	<0.1	<0.1
Surrogate TCMX	%	79	79	81	80	77

Acid Extractable metals in soil

Our Reference		280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference	UNITS	101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	15	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	10	33	4	3	3
Copper	mg/kg	14	2	<1	5	5
Lead	mg/kg	11	13	17	22	390
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	18	5	<1	<1	<1
Zinc	mg/kg	18	6	6	22	23

Acid Extractable metals in soil

Our Reference		280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference	UNITS	106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	2	6	7	28	<1
Copper	mg/kg	12	5	<1	22	1
Lead	mg/kg	180	44	6	5	2
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	1	1	23	<1
Zinc	mg/kg	23	36	4	19	5

Acid Extractable metals in soil

Our Reference		280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference	UNITS	111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	<1	<1	<1	<1	4
Copper	mg/kg	<1	<1	<1	<1	1
Lead	mg/kg	1	1	<1	2	5
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	2	1	2	2	6

Acid Extractable metals in soil

Our Reference		280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference	UNITS	116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	4	3	<1	7
Copper	mg/kg	1	7	1	2	3
Lead	mg/kg	5	8	4	3	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	12	8	4	10	22

Acid Extractable metals in soil

Our Reference		280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference	UNITS	121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	5	6	3	5
Copper	mg/kg	1	2	5	2	<1
Lead	mg/kg	7	7	7	5	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	9	11	24	8	6

Acid Extractable metals in soil

Our Reference		280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference	UNITS	126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	3	8	8	11
Copper	mg/kg	2	15	35	<1	63
Lead	mg/kg	41	34	96	4	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	7	13	1	73
Zinc	mg/kg	28	33	180	6	38

Acid Extractable metals in soil

Our Reference		280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference	UNITS	129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	7	5	5	10
Copper	mg/kg	4	6	14	2	12
Lead	mg/kg	16	12	30	7	16
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	2	2	<1	2
Zinc	mg/kg	41	180	110	19	64

Acid Extractable metals in soil

Our Reference		280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference	UNITS	134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	6	7	7	6
Copper	mg/kg	5	6	16	15	10
Lead	mg/kg	9	18	54	23	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	1	5	10	6
Zinc	mg/kg	26	44	43	93	46

Acid Extractable metals in soil

Our Reference		280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference	UNITS	138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	13	6	19	6
Copper	mg/kg	<1	27	6	25	<1
Lead	mg/kg	5	11	11	17	4
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	33	4	30	<1
Zinc	mg/kg	2	50	39	73	35

Acid Extractable metals in soil

Our Reference		280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference	UNITS	141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	18	4	12	20
Copper	mg/kg	4	38	<1	39	32
Lead	mg/kg	21	20	5	10	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	34	<1	49	44
Zinc	mg/kg	36	41	2	37	53

Acid Extractable metals in soil

Our Reference		280737-51	280737-52	280737-53	280737-54	280737-55
Your Reference	UNITS	146/0.1	147/0.1	QA1	QA2	QA3
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	23	9	2	<1	3
Copper	mg/kg	44	10	6	<1	4
Lead	mg/kg	7	18	200	1	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	52	11	<1	<1	<1
Zinc	mg/kg	37	26	22	1	5

Acid Extractable metals in soil

Our Reference		280737-57	280737-58	280737-59
Your Reference	UNITS	120/0.05 - [TRIPLICATE]	138/0.1 - [TRIPLICATE]	140/0.1 - [TRIPLICATE]
Depth		0.0-0.10	0.00-0.10	0.00-0.10
Date Sampled		14/10/2021	15/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	22/10/2021	22/10/2021	22/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	9	6	33
Copper	mg/kg	3	11	29
Lead	mg/kg	9	11	13
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	7	36
Zinc	mg/kg	19	42	72

Moisture						
Our Reference	UNITS	280737-1	280737-2	280737-3	280737-4	280737-5
Your Reference		101/0.1	102/0.1	103/0.1	104/0.05	105/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	13	22	12	21	16

Moisture						
Our Reference	UNITS	280737-6	280737-7	280737-8	280737-9	280737-10
Your Reference		106/0.1	107/0.1	108/0.05	109/0.05	110/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	15	17	24	9.2	9.0

Moisture						
Our Reference	UNITS	280737-11	280737-12	280737-13	280737-14	280737-15
Your Reference		111/0.1	112/0.1	113/0.1	114/0.1	115/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	8.2	9.0	6.4	10	7.2

Moisture						
Our Reference	UNITS	280737-16	280737-17	280737-18	280737-19	280737-20
Your Reference		116/0.1	117/0.1	118/0.05	119/0.05	120/0.05
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	11	13	11	8.3	12

Moisture						
Our Reference	UNITS	280737-21	280737-22	280737-23	280737-24	280737-25
Your Reference		121/0.1	122/0.05	123/0.1	124/0.1	125/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	9.5	15	8.3	11	15

Moisture						
Our Reference	UNITS	280737-26	280737-27	280737-28	280737-29	280737-30
Your Reference		126/0.1	127/0.1	128/0.1	128/0.5	129/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.40-0.50	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	14	9.6	4.3	9.7	6.0

Moisture						
Our Reference	UNITS	280737-31	280737-32	280737-33	280737-34	280737-35
Your Reference		129/0.65	130/0.05	131/0.1	132/0.1	133/0.1
Depth		0.60-0.70	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	13	11	22	16	28

Moisture						
Our Reference	UNITS	280737-36	280737-37	280737-38	280737-39	280737-40
Your Reference		134/0.1	135/0.1	136/0.1	137/0.1	138/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	11	16	11	12	16

Moisture						
Our Reference	UNITS	280737-41	280737-42	280737-43	280737-44	280737-45
Your Reference		138/1.1	139/0.1	139/0.5	140/0.1	140/0.4
Depth		1.00-1.10	0.00-0.10	0.40-0.50	0.00-0.10	0.30-0.40
Date Sampled		15/10/2021	15/10/2021	15/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	12	13	12	14	15

Moisture						
Our Reference	UNITS	280737-46	280737-47	280737-48	280737-49	280737-50
Your Reference		141/0.1	142/0.1	143/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	13	5.9	9.6	9.9	15

Moisture						
Our Reference	UNITS	280737-51	280737-52	280737-53	280737-54	280737-55
Your Reference		146/0.1	147/0.1	QA1	QA2	QA3
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	15/10/2021	14/10/2021	14/10/2021	14/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2021	21/10/2021	21/10/2021	21/10/2021	21/10/2021
Date analysed	-	22/10/2021	22/10/2021	22/10/2021	22/10/2021	22/10/2021
Moisture	%	9.9	13	12	8.2	13

Asbestos ID - soils NEPM						
Our Reference		280737-5	280737-6	280737-20	280737-26	280737-27
Your Reference	UNITS	105/0.1	106/0.1	120/0.05	126/0.1	127/0.1
Depth		0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10	0.0-0.10
Date Sampled		14/10/2021	14/10/2021	14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	517.78	473.02	519.6	568.58	638.85
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	—	—
FA and AF Estimation*	g	—	—	—	—	—
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM						
Our Reference		280737-28	280737-30	280737-31	280737-33	280737-35
Your Reference	UNITS	128/0.1	129/0.1	129/0.65	131/0.1	133/0.1
Depth		0.0-0.10	0.00-0.10	0.60-0.70	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	585.5	776.13	594.96	515.37	459.17
Sample Description	-	Brown coarse-grained soil & debris	Grey coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	0.8209	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	See Above	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	0.4231	—
FA and AF Estimation*	g	—	—	—	—	—
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM

Our Reference		280737-37	280737-38	280737-39	280737-40	280737-42
Your Reference	UNITS	135/0.1	136/0.1	137/0.1	138/0.1	139/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		15/10/2021	15/10/2021	15/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	721.9	731.71	564.48	458.86	728.74
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	—	—
FA and AF Estimation*	g	—	—	—	—	—
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Asbestos ID - soils NEPM

Our Reference		280737-44	280737-46	280737-47	280737-49	280737-50
Your Reference	UNITS	140/0.1	141/0.1	142/0.1	144/0.1	145/0.1
Depth		0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10	0.00-0.10
Date Sampled		13/10/2021	13/10/2021	13/10/2021	13/10/2021	13/10/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/10/2021	27/10/2021	27/10/2021	27/10/2021	27/10/2021
Sample mass tested	g	625.27	731.61	627.63	258.96	292.12
Sample Description	-	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	—	—	—	—	—
FA and AF Estimation*	g	—	—	—	—	—
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001

Misc Inorg - Soil				
Our Reference		280737-1	280737-29	280737-43
Your Reference	UNITS	101/0.1	128/0.5	139/0.5
Depth		0.0-0.10	0.40-0.50	0.40-0.50
Date Sampled		14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	25/10/2021	25/10/2021	25/10/2021
Date analysed	-	25/10/2021	25/10/2021	25/10/2021
pH 1:5 soil:water	pH Units	6.0	6.5	8.3

CEC				
Our Reference		280737-1	280737-29	280737-43
Your Reference	UNITS	101/0.1	128/0.5	139/0.5
Depth		0.0-0.10	0.40-0.50	0.40-0.50
Date Sampled		14/10/2021	15/10/2021	15/10/2021
Type of sample		Soil	Soil	Soil
Date prepared	-	27/10/2021	27/10/2021	27/10/2021
Date analysed	-	27/10/2021	27/10/2021	27/10/2021
Exchangeable Ca	meq/100g	1.8	0.9	3.7
Exchangeable K	meq/100g	0.2	<0.1	<0.1
Exchangeable Mg	meq/100g	1.5	0.2	0.3
Exchangeable Na	meq/100g	<0.1	<0.1	<0.1
Cation Exchange Capacity	meq/100g	3.6	1.1	4.0

vTRH(C6-C10)/BTEXN in Water		
Our Reference		280737-56
Your Reference	UNITS	RB1
Depth		-
Date Sampled		14/10/2021
Type of sample		Water
Date extracted	-	20/10/2021
Date analysed	-	21/10/2021
TRH C ₆ - C ₉	µg/L	<10
TRH C ₆ - C ₁₀	µg/L	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	103

svTRH (C10-C40) in Water		
Our Reference		280737-56
Your Reference	UNITS	RB1
Depth		-
Date Sampled		14/10/2021
Type of sample		Water
Date extracted	-	21/10/2021
Date analysed	-	22/10/2021
TRH C ₁₀ - C ₁₄	µg/L	<50
TRH C ₁₅ - C ₂₈	µg/L	<100
TRH C ₂₉ - C ₃₆	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C ₁₀ - C ₁₆	µg/L	77
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	77
TRH >C ₁₆ - C ₃₄	µg/L	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	80
Surrogate o-Terphenyl	%	75

Metals in Water - Dissolved		
Our Reference		280737-56
Your Reference	UNITS	RB1
Depth		-
Date Sampled		14/10/2021
Type of sample		Water
Date digested	-	21/10/2021
Date analysed	-	21/10/2021
Arsenic - Dissolved	mg/L	<0.05
Cadmium - Dissolved	mg/L	<0.01
Chromium - Dissolved	mg/L	<0.01
Copper - Dissolved	mg/L	<0.01
Lead - Dissolved	mg/L	<0.03
Mercury - Dissolved	mg/L	<0.0005
Nickel - Dissolved	mg/L	<0.02
Zinc - Dissolved	mg/L	<0.02

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	<p>Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004.</p> <p>Results reported denoted with * are outside our scope of NATA accreditation.</p> <p>NOTE #1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF)</p> <p>NOTE #2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.</p> <p>Estimation = Estimated asbestos weight</p> <p>Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.</p>
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p>

Method ID	Methodology Summary
Org-020	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.</p> <p>F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.</p> <p>Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).</p>
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.</p> <p>Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.</p>
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	<p>Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS.</p> <p>Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.</p>
Org-022/025	<p>Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.</p> <p>For soil results:-</p> <ol style="list-style-type: none"> 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. <p>Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.</p>
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	<p>Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.</p> <p>Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.</p>

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			25/10/2021	5	25/10/2021	25/10/2021		25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	5	<25	<25	0	85	84
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	5	<25	<25	0	85	84
Benzene	mg/kg	0.2	Org-023	<0.2	5	<0.2	<0.2	0	81	84
Toluene	mg/kg	0.5	Org-023	<0.5	5	<0.5	<0.5	0	80	80
Ethylbenzene	mg/kg	1	Org-023	<1	5	<1	<1	0	95	92
m+p-xylene	mg/kg	2	Org-023	<2	5	<2	<2	0	84	82
o-Xylene	mg/kg	1	Org-023	<1	5	<1	<1	0	82	80
Naphthalene	mg/kg	1	Org-023	<1	5	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	93	5	90	81	11	92	90

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-50
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	40	25/10/2021	25/10/2021		25/10/2021	25/10/2021
TRH C ₆ - C ₉	mg/kg	25	Org-023	[NT]	40	<25	<25	0	75	89
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	[NT]	40	<25	<25	0	75	89
Benzene	mg/kg	0.2	Org-023	[NT]	40	<0.2	<0.2	0	72	86
Toluene	mg/kg	0.5	Org-023	[NT]	40	<0.5	<0.5	0	73	86
Ethylbenzene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	84	98
m+p-xylene	mg/kg	2	Org-023	[NT]	40	<2	<2	0	74	88
o-Xylene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	73	89
Naphthalene	mg/kg	1	Org-023	[NT]	40	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	40	89	93	4	83	102

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	5	<50	<50	0	94	91
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	5	<100	<100	0	93	91
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	5	<100	110	10	109	101
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	5	<50	<50	0	94	91
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	5	<100	100	0	93	91
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	5	<100	<100	0	109	101
Surrogate o-Terphenyl	%		Org-020	80	5	81	81	0	105	81

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		23/10/2021	23/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	20	<50	<50	0	102	104
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	20	<100	<100	0	101	#
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	20	<100	<100	0	127	#
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	20	<50	<50	0	102	104
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	20	<100	<100	0	101	#
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	20	<100	<100	0	127	#
Surrogate o-Terphenyl	%		Org-020	[NT]	20	80	79	1	112	99

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		23/10/2021	23/10/2021
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	30	<50	<50	0	90	123
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	30	<100	<100	0	86	109
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	30	<100	<100	0	109	#
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	30	<50	<50	0	90	123
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	30	<100	<100	0	86	109
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	30	<100	<100	0	109	#
Surrogate o-Terphenyl	%		Org-020	[NT]	30	79	77	3	107	100

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	40	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	40	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	40	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	40	76	75	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	23/10/2021	23/10/2021		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	44	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	44	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	44	300	280	7	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	44	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	44	270	240	12	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	44	400	380	5	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	44	79	78	1	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	23/10/2021	23/10/2021		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	49	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	49	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	49	160	220	32	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	49	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	49	120	190	45	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	49	240	320	29	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	49	78	76	3	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	84	86
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	83	81
Fluorene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	86	86
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	84	84
Anthracene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	92	90
Pyrene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	93	91
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	87	81
Benzo(b,j,k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	5	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	5	<0.05	<0.05	0	96	94
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	100	5	88	85	3	93	89

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	92	123
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	91	#
Fluorene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	93	#
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	96	#
Anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	104	#
Pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	103	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	93	#
Benzo(b,j,k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	20	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	20	<0.05	<0.05	0	92	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	20	96	96	0	106	98

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	93	84
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	89	79
Fluorene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	95	86
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	94	83
Anthracene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	30	0.1	<0.1	0	104	96
Pyrene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	103	93
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	93	83
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	30	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	30	0.08	<0.05	46	96	106
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	30	103	100	3	106	90

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	40	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	40	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	40	95	94	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	44	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	44	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	44	88	90	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	49	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	49	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	49	90	89	1	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	100	88
HCB	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	85	79
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	73	73
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	105	109
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	86	82
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	88	82
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	86	92
Endrin	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	105	92
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	82	78
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	90	86
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	89	5	77	77	0	83	81

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	106	86
HCB	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	92	89
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	79	75
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	116	111
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	94	79
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	96	90
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	110	85
Endrin	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	107	96
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	88	79
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	88	94
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	83	84	1	91	81

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	104	88
HCB	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	99	89
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	73	65
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	113	96
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	94	77
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	96	86
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	104	87
Endrin	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	105	82
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	88	73
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	90	82
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	30	89	89	0	93	80

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	40	84	81	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	44	79	81	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	49	80	79	1	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	68	66
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	89	97
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	81	75
Malathion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	112	103
Chlorpyrifos	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	82	90
Parathion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	74	80
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	98	94
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	89	5	77	77	0	83	81

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	68	68
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	95	91
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	71	75
Malathion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	116	103
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	98	104
Parathion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	74	105
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	98	81
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	20	83	84	1	91	81

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	80	66
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	97	85
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	77	65
Malathion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	108	91
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	102	88
Parathion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	72	64
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	94	90
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	30	89	89	0	93	80

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	40	84	81	4	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	44	79	81	2	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	49	80	79	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date extracted	-			21/10/2021	5	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	77	74
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	5	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	89	5	77	77	0	83	81

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date extracted	-			[NT]	20	21/10/2021	21/10/2021		21/10/2021	21/10/2021
Date analysed	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	72	118
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	20	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	20	83	84	1	91	81

QUALITY CONTROL: PCBs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date extracted	-			[NT]	30	21/10/2021	21/10/2021		21/10/2021	22/10/2021
Date analysed	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	72	68
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	30	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	30	89	89	0	93	80

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	40	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	40	3.0	3.8	24	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	40	84	81	4	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	44	0.3	0.1	100	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	44	79	81	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	49	21/10/2021	21/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	49	80	79	1	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-6
Date prepared	-			22/10/2021	5	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Date analysed	-			25/10/2021	5	25/10/2021	25/10/2021		25/10/2021	25/10/2021
Arsenic	mg/kg	4	Metals-020	<4	5	<4	<4	0	103	102
Cadmium	mg/kg	0.4	Metals-020	<0.4	5	<0.4	<0.4	0	101	92
Chromium	mg/kg	1	Metals-020	<1	5	3	3	0	101	101
Copper	mg/kg	1	Metals-020	<1	5	5	5	0	105	103
Lead	mg/kg	1	Metals-020	<1	5	390	330	17	97	75
Mercury	mg/kg	0.1	Metals-021	<0.1	5	<0.1	<0.1	0	101	105
Nickel	mg/kg	1	Metals-020	<1	5	<1	<1	0	100	102
Zinc	mg/kg	1	Metals-020	<1	5	23	21	9	99	88

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-10	280737-31
Date prepared	-			[NT]	20	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Date analysed	-			[NT]	20	25/10/2021	25/10/2021		25/10/2021	25/10/2021
Arsenic	mg/kg	4	Metals-020	[NT]	20	<4	<4	0	103	106
Cadmium	mg/kg	0.4	Metals-020	[NT]	20	<0.4	<0.4	0	103	98
Chromium	mg/kg	1	Metals-020	[NT]	20	7	22	103	102	98
Copper	mg/kg	1	Metals-020	[NT]	20	3	3	0	105	117
Lead	mg/kg	1	Metals-020	[NT]	20	10	11	10	100	90
Mercury	mg/kg	0.1	Metals-021	[NT]	20	<0.1	<0.1	0	101	103
Nickel	mg/kg	1	Metals-020	[NT]	20	<1	<1	0	101	96
Zinc	mg/kg	1	Metals-020	[NT]	20	22	23	4	107	85

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-11	280737-50
Date prepared	-			[NT]	30	22/10/2021	22/10/2021		22/10/2021	22/10/2021
Date analysed	-			[NT]	30	25/10/2021	25/10/2021		25/10/2021	25/10/2021
Arsenic	mg/kg	4	Metals-020	[NT]	30	<4	<4	0	96	#
Cadmium	mg/kg	0.4	Metals-020	[NT]	30	<0.4	<0.4	0	98	76
Chromium	mg/kg	1	Metals-020	[NT]	30	11	9	20	98	91
Copper	mg/kg	1	Metals-020	[NT]	30	63	56	12	100	124
Lead	mg/kg	1	Metals-020	[NT]	30	3	5	50	95	78
Mercury	mg/kg	0.1	Metals-021	[NT]	30	<0.1	<0.1	0	106	124
Nickel	mg/kg	1	Metals-020	[NT]	30	73	65	12	96	98
Zinc	mg/kg	1	Metals-020	[NT]	30	38	33	14	97	74

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	40	22/10/2021	22/10/2021		[NT]	[NT]
Date analysed	-			[NT]	40	25/10/2021	25/10/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	40	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	40	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	40	6	7	15	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	40	10	14	33	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	40	12	8	40	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	40	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	40	6	10	50	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	40	46	50	8	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	44	22/10/2021	22/10/2021		[NT]	[NT]
Date analysed	-			[NT]	44	25/10/2021	25/10/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	44	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	44	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	44	19	22	15	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	44	25	34	31	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	44	17	11	43	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	44	30	41	31	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	44	73	87	18	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	49	22/10/2021	22/10/2021		[NT]	[NT]
Date analysed	-			[NT]	49	25/10/2021	25/10/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	49	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	49	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	49	12	13	8	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	49	39	47	19	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	49	10	11	10	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	49	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	49	49	52	6	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	49	37	34	8	[NT]	[NT]

Client Reference: 202936.01, Mount White

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			25/10/2021	1	25/10/2021	25/10/2021		25/10/2021	[NT]
Date analysed	-			25/10/2021	1	25/10/2021	25/10/2021		25/10/2021	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	1	6.0	6.1	2	100	[NT]

QUALITY CONTROL: CEC					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	280737-43
Date prepared	-			27/10/2021	29	27/10/2021	27/10/2021		27/10/2021	27/10/2021
Date analysed	-			27/10/2021	29	27/10/2021	27/10/2021		27/10/2021	27/10/2021
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	29	0.9	1.0	11	109	#
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	29	<0.1	<0.1	0	110	107
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	29	0.2	0.2	0	104	108
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	29	<0.1	<0.1	0	115	112

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			20/10/2021	[NT]	[NT]	[NT]	[NT]	20/10/2021	[NT]
Date analysed	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	96	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	99	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate toluene-d8	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-BFB	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
Date analysed	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	79	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
Surrogate o-Terphenyl	%		Org-020	73	[NT]	[NT]	[NT]	[NT]	76	[NT]

QUALITY CONTROL: Metals in Water - Dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date digested	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
Date analysed	-			21/10/2021	[NT]	[NT]	[NT]	[NT]	21/10/2021	[NT]
Arsenic - Dissolved	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	95	[NT]
Cadmium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	94	[NT]
Chromium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	89	[NT]
Copper - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	93	[NT]
Lead - Dissolved	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	93	[NT]
Mercury - Dissolved	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	100	[NT]
Nickel - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	91	[NT]
Zinc - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	92	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

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

PAHs in Soil - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in sample/s 280737-31ms have caused interference.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate/matrix spike is not possible to report as the high concentration of analytes in samples #31 and 50 have caused interference.

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

Acid Extractable Metals in Soil:

- The laboratory RPD acceptance criteria has been exceeded for 280737-20 for Cr. Therefore a triplicate result has been issued as laboratory sample number 280737-57.
- The laboratory RPD acceptance criteria has been exceeded for 280737-40 for Pb and Ni. Therefore a triplicate result has been issued as laboratory sample number 280737-58.
- The laboratory RPD acceptance criteria has been exceeded for 280737-44 for Pb. Therefore a triplicate result has been issued as laboratory sample number 280737-59
- # Low spike recovery was obtained for this sample. Sample matrix interference is suspected. However, an acceptable recovery was obtained for the LCS

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Factual description of asbestos identified in the soil samples: NEPM

Sample 280737-33; Chrysotile asbestos identified in 4.2306g of fibre cement material >7mm

CEC - # High spike recovery was obtained for this sample. The sample was re-digested and re-spiked and the high recovery was confirmed. This is suspected to be from matrix interferences. However, an acceptable recovery was obtained for the LCS.

PCB_S:The PQL has been raised due to interferences from analytes (other than those being tested) in sample/s 280737-46.

Project No: 202936.01		Suburb: Mount White		To: Envirolab Services	
Project Manager: Brent Kerry		Order Number:		Sampler: MTH	
Email: Brent.Kerry@douglaspartners.com.au				Attn: Sample Receipt	
Turnaround time: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 72 hour <input type="checkbox"/> 48 hour <input type="checkbox"/> 24 hour <input type="checkbox"/> Same day				Contact: (02) 9910 6200 samplereceipt@envirolab.com.au	
Prior Storage: <input checked="" type="checkbox"/> Fridge <input type="checkbox"/> Freezer <input type="checkbox"/> Shelf		Do samples contain 'potential' HBM? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes (If YES, then handle, transport and store in accordance with FPM HAZID)			

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX			
1	101/0.1	0.00	0.10	14/10/21	S	G	X	X	X				X				All asbestos testing 500ml NEPC method
2	102/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
3	103/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
4	104/0.05	0.00	0.10	14/10/21	S	G	X	X	X								
5	105/0.1	0.00	0.10	14/10/21	S	G						X					
6	106/0.1	0.00	0.10	14/10/21	S	G						X					
7	107/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
8	108/0.05	0.00	0.10	14/10/21	S	G	X	X	X								
9	109/0.05	0.00	0.10	14/10/21	S	G	X	X	X								
10	110/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
11	111/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
12	112/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
13	113/0.1	0.00	0.10	14/10/21	S	G	X	X	X								
14	114/0.1	0.00	0.10	14/10/21	S	G	X	X	X								

Metals to analyse:		Transported to laboratory by: TNT		LAB RECEIPT	
Number of samples in container:		Send results to: Douglas Partners Pty Ltd		Lab Ref. No: 280737	
Address: Unit 5, 3 Teamster Close, Tuggerah NSW		Phone: (02) 4351 1422		Received by: J HAW	
Relinquished by: <i>[Signature]</i>		Date: 18/10/21		Date & Time: 19/10/2020 20/10/21 10:15	
		Signed: <i>[Signature]</i>		Signed: <i>[Signature]</i>	

Chatswood NSW 2037
Ph: (02) 9910 6200

Date Received: 19/10/21
Time Received: 20/10/21 10:15
Received By: J HAW
Temp: Cool/Ambient
Ice/Ice pack
Leak/Spill/No

Project No: 202936.01					Suburb: Mount White					To: Envirolab Services				
Project Manager: Brent Kerry					Order Number:					Dispatch date: 12 Ashley St, Chatswood NSW 2067				

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes											Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX				
15	115/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
16	116/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
17	117/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
18	118/0.05	0.00	0.10	14/10/21	S	G	X	X	X									
19	119/0.05	0.00	0.10	14/10/21	S	G	X	X	X									
20	120/0.05	0.00	0.10	14/10/21	S	G						X						
21	121/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
22	122/0.05	0.00	0.10	14/10/21	S	G	X	X	X									
23	123/0.1	0.00	0.10	14/10/21	S	G	X	X	X									
24	124/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
25	125/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
26	126/0.1	0.00	0.10	15/10/21	S	G						X						
27	127/0.1	0.00	0.10	15/10/21	S	G						X						
28	128/0.1	0.00	0.10	15/10/21	S	G						X						
29	128/0.5	0.40	0.50	15/10/21	S	G	X	X	X				X					
30	129/0.1	0.00	0.10	15/10/21	S	G						X						
31	129/0.65	0.60	0.70	15/10/21	S	G						X						
32	130/0.05	0.00	0.10	15/10/21	S	G	X	X	X									

Project No: 202936.01					Suburb: Mount White					To: Envirolab Services								
Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes											Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX				
33	131/0.1	0.00	0.10	15/10/21	S	G							X					
34	132/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
35	133/0.1	0.00	0.10	15/10/21	S	G							X					
36	134/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
37	135/0.1	0.00	0.10	15/10/21	S	G							X					
38	136/0.1	0.00	0.10	15/10/21	S	G							X					
39	137/0.1	0.00	0.10	15/10/21	S	G							X					
40	138/0.1	0.00	0.10	15/10/21	S	G							X					
41	138/1.1	1.00	1.10	15/10/21	S	G	X	X	X									
42	139/0.1	0.00	0.10	15/10/21	S	G							X					
43	139/0.5	0.40	0.50	15/10/21	S	G	X	X	X					X				
44	140/0.1	0.00	0.10	13/10/21	S	G							X					
45	140/0.4	0.30	0.40	13/10/21	S	G	X	X	X									
46	141/0.1	0.00	0.10	13/10/21	S	G							X					
47	142/0.1	0.00	0.10	13/10/21	S	G							X					
48	143/0.1	0.00	0.10	13/10/21	S	G	X	X	X									
49	144/0.1	0.00	0.10	13/10/21	S	G							X					
50	145/0.1	0.00	0.10	13/10/21	S	G							X					
51	146/0.1	0.00	0.10	13/10/21	S	G	X	X	X									

Project No: 202936.01					Suburb: Mount White					To: Envirolab Services								
Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements	
	Location / Other ID	Depth From	Depth To		S - soil W - water	G - glass P - plastic	HM	OCP	OPP	COMBO#5	COMBO#5 A	COMBO#6 A	pH/CEC	TRH/BTEX				
S2	147/0.1	0.00	0.10	15/10/21	S	G	X	X	X									
S3	QA1	0.00	0.10	14/10/21	S	G	X							X				
S4	QA2	0.00	0.10	14/10/21	S	G	X	X						X				
S5	QA3	0.00	0.10	14/10/21	S	G	X	X										
S6	RB1			14/10/21	W	G + P	X							X				

CERTIFICATE OF ANALYSIS 281390

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	<u>202936.01, Mount White</u>
Number of Samples	5 Water
Date samples received	28/10/2021
Date completed instructions received	28/10/2021

Analysis Details

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

Report Details

Date results requested by	04/11/2021
Date of Issue	03/11/2021
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Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water						
Our Reference		281390-1	281390-2	281390-3	281390-4	281390-5
Your Reference	UNITS	MW140	MW142	MW145	QA1W	RB1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
Date analysed	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
TRH C ₆ - C ₉	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀	µg/L	<10	<10	<10	<10	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	102	99	99	99	99
Surrogate toluene-d8	%	98	98	99	98	97
Surrogate 4-BFB	%	106	104	106	108	105

svTRH (C10-C40) in Water						
Our Reference		281390-1	281390-2	281390-3	281390-4	281390-5
Your Reference	UNITS	MW140	MW142	MW145	QA1W	RB1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	01/11/2021	01/11/2021	01/11/2021	01/11/2021	01/11/2021
Date analysed	-	02/11/2021	02/11/2021	02/11/2021	02/11/2021	02/11/2021
TRH C ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100	130
TRH C ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	<50	<50	<50	<50	130
TRH >C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50	120
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50	120
TRH >C ₁₆ - C ₃₄	µg/L	<100	<100	<100	<100	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	<50	<50	<50	<50	120
Surrogate o-Terphenyl	%	85	87	86	86	104

PAHs in Water - Low Level					
Our Reference		281390-1	281390-2	281390-3	281390-4
Your Reference	UNITS	MW140	MW142	MW145	QA1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water
Date extracted	-	01/11/2021	01/11/2021	01/11/2021	01/11/2021
Date analysed	-	01/11/2021	01/11/2021	01/11/2021	01/11/2021
Naphthalene	µg/L	<0.2	<0.2	<0.2	<0.2
Acenaphthylene	µg/L	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	µg/L	<0.1	<0.1	<0.1	<0.1
Surrogate <i>p</i> -Terphenyl-d14	%	83	92	90	89

HM in water - dissolved						
Our Reference		281390-1	281390-2	281390-3	281390-4	281390-5
Your Reference	UNITS	MW140	MW142	MW145	QA1W	RB1W
Date Sampled		26/10/2021	26/10/2021	26/10/2021	26/10/2021	26/10/2021
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
Date analysed	-	29/10/2021	29/10/2021	29/10/2021	29/10/2021	29/10/2021
Arsenic-Dissolved	µg/L	<1	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	<1	<1	<1	<1
Copper-Dissolved	µg/L	<1	2	3	2	<1
Lead-Dissolved	µg/L	<1	<1	<1	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	2	4	11	4	<1
Zinc-Dissolved	µg/L	15	57	23	58	<1

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W5	[NT]
Date extracted	-			29/10/2021	2	29/10/2021	01/11/2021		29/10/2021	[NT]
Date analysed	-			29/10/2021	2	29/10/2021	02/11/2021		29/10/2021	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	2	<10	<10	0	102	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	2	<10	<10	0	102	[NT]
Benzene	µg/L	1	Org-023	<1	2	<1	<1	0	87	[NT]
Toluene	µg/L	1	Org-023	<1	2	<1	<1	0	98	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	2	<1	<1	0	107	[NT]
m+p-xylene	µg/L	2	Org-023	<2	2	<2	<2	0	110	[NT]
o-xylene	µg/L	1	Org-023	<1	2	<1	<1	0	107	[NT]
Naphthalene	µg/L	1	Org-023	<1	2	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	100	2	99	99	0	102	[NT]
Surrogate toluene-d8	%		Org-023	98	2	98	99	1	99	[NT]
Surrogate 4-BFB	%		Org-023	104	2	104	102	2	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
Date analysed	-			02/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	97	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	97	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	78	[NT]
Surrogate o-Terphenyl	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	80	[NT]

QUALITY CONTROL: PAHs in Water - Low Level					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			01/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
Date analysed	-			01/11/2021	[NT]	[NT]	[NT]	[NT]	01/11/2021	[NT]
Naphthalene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	87	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	82	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: HM in water - dissolved					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			29/10/2021	1	29/10/2021	29/10/2021		29/10/2021	[NT]
Date analysed	-			29/10/2021	1	29/10/2021	29/10/2021		29/10/2021	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	99	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	<0.1	<0.1	0	100	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	100	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	97	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	107	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	<0.05	0	107	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	2	2	0	99	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	15	15	0	100	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45µm filter at the lab.

Note: there is a possibility some elements may be underestimated.

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

FPM - ENVID/Form COC 02

CERTIFICATE OF ANALYSIS

Work Order : **ES2138103**
Client : **DOUGLAS PARTNERS PTY LTD**
Contact : BRENT KERRY
Address : 96 HERMITAGE ROAD
 WEST RYDE NSW, AUSTRALIA 2114
Telephone : ----
Project : 202936.01
Order number : ----
C-O-C number : ----
Sampler : MJH
Site : Mount White
Quote number : EN/222
No. of samples received : 3
No. of samples analysed : 3

Page : 1 of 5
Laboratory : Environmental Division Sydney
Contact : Sepan Mahamad
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61 2 8784 8555
Date Samples Received : 21-Oct-2021 17:20
Date Analysis Commenced : 22-Oct-2021
Issue Date : 28-Oct-2021 13:54



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, 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 Contact 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.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				QA4 0.00-0.10	QA5 0.40-0.50	QA6 0.40-0.50	----	----
Sampling date / time				14-Oct-2021 00:00	14-Oct-2021 00:00	14-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2138103-001	ES2138103-002	ES2138103-003	-----	-----
Result				Result	Result	Result	----	----
EA055: Moisture Content								
Moisture Content	----	1.0	%	----	----	11.3	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.2	14.6	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	5	4	8	----	----
Copper	7440-50-8	5	mg/kg	<5	<5	12	----	----
Lead	7439-92-1	5	mg/kg	8	50	52	----	----
Nickel	7440-02-0	2	mg/kg	<2	<2	7	----	----
Zinc	7440-66-6	5	mg/kg	10	33	49	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
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

				QA4 0.00-0.10	QA5 0.40-0.50	QA6 0.40-0.50	----	----
Sampling date / time				14-Oct-2021 00:00	14-Oct-2021 00:00	14-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2138103-001	ES2138103-002	ES2138103-003	-----	-----
				Result	Result	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	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	----	----	92.8	----	----
Toluene-D8	2037-26-5	0.2	%	----	----	88.9	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	----	89.2	----	----



Surrogate Control Limits

Sub-Matrix: **SOIL**

		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Telephone : + 61-2-8784 8555

QUALITY CONTROL REPORT

Work Order	: ES2138103	Page	: 1 of 5
Client	: DOUGLAS PARTNERS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 202936.01	Date Samples Received	: 21-Oct-2021
Order number	: ----	Date Analysis Commenced	: 22-Oct-2021
C-O-C number	: ----	Issue Date	: 28-Oct-2021
Sampler	: MJH		
Site	: Mount White		
Quote number	: EN/222		
No. of samples received	: 3		
No. of samples analysed	: 3		



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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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



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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%.

				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: 3975128)									
ES2138023-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	9	8	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
ES2138270-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	12	23.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	<5	41.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	14	10.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	10	8	15.5	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3975129)									
ES2138101-003	Anonymous	EA055: Moisture Content	----	0.1	%	10.8	9.9	8.2	0% - 50%
ES2138270-005	Anonymous	EA055: Moisture Content	----	0.1	%	13.0	13.2	1.8	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3975127)									
ES2138023-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2138270-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3970878)									
ES2138101-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Page : 3 of 5
 Work Order : ES2138103
 Client : DOUGLAS PARTNERS PTY LTD
 Project : 202936.01



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3970923)									
ES2137799-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2137799-007	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3970878)									
ES2138101-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	160	130	22.2	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: 3970923)									
ES2137799-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2137799-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 3970923)									
ES2137799-001	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	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2137799-007	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
		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	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		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		



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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3975128)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	106	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	95.2	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	121	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	110	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	115	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	92.9	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3975127)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	106	70.0	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970878)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	95.9	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	101	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	99.6	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970923)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	91.2	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970878)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	91.7	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	106	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970923)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	91.4	68.4	128
EP080: BTEXN (QCLot: 3970923)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	100	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.0	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.7	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.2	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	98.3	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.2	63.0	119

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**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3975128)							
ES2138023-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	86.0	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	72.4	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	75.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	90.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	74.8	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	87.6	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	67.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3975127)							
ES2138023-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	112	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970878)							
ES2138101-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	98.4	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	99.2	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	110	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3970923)							
ES2137799-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	80.4	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970878)							
ES2138101-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	98.2	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	99.5	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	114	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3970923)							
ES2137799-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	75.3	70.0	130
EP080: BTEXN (QCLot: 3970923)							
ES2137799-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	70.5	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	73.7	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	78.3	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	79.2	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	80.5	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2138103	Page	: 1 of 4
Client	: DOUGLAS PARTNERS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Telephone	: +61 2 8784 8555
Project	: 202936.01	Date Samples Received	: 21-Oct-2021
Site	: Mount White	Issue Date	: 28-Oct-2021
Sampler	: MJH	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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



Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055) QA6 - 0.40-0.50	14-Oct-2021	----	----	----	25-Oct-2021	28-Oct-2021	✓
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QA4 - 0.00-0.10, QA5 - 0.40-0.50	14-Oct-2021	----	----	----	25-Oct-2021	28-Oct-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QA4 - 0.00-0.10, QA5 - 0.40-0.50, QA6 - 0.40-0.50	14-Oct-2021	25-Oct-2021	12-Apr-2022	✓	26-Oct-2021	12-Apr-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QA4 - 0.00-0.10, QA5 - 0.40-0.50, QA6 - 0.40-0.50	14-Oct-2021	25-Oct-2021	11-Nov-2021	✓	26-Oct-2021	11-Nov-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QA6 - 0.40-0.50	14-Oct-2021	22-Oct-2021	28-Oct-2021	✓	25-Oct-2021	28-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP071) QA6 - 0.40-0.50	14-Oct-2021	26-Oct-2021	28-Oct-2021	✓	27-Oct-2021	05-Dec-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QA6 - 0.40-0.50	14-Oct-2021	22-Oct-2021	28-Oct-2021	✓	25-Oct-2021	28-Oct-2021	✓
Soil Glass Jar - Unpreserved (EP071) QA6 - 0.40-0.50	14-Oct-2021	26-Oct-2021	28-Oct-2021	✓	27-Oct-2021	05-Dec-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QA6 - 0.40-0.50	14-Oct-2021	22-Oct-2021	28-Oct-2021	✓	25-Oct-2021	28-Oct-2021	✓



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	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
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.
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ 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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES2138103

Client	: DOUGLAS PARTNERS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: brent.kerry@douglaspartners.com.au	E-mail	: Sepan.Mahamad@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 202936.01	Page	: 1 of 2
Order number	: ----	Quote number	: EM2017DOUPAR0002 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Mount White		
Sampler	: MJH		

Dates

Date Samples Received	: 21-Oct-2021 17:20	Issue Date	: 22-Oct-2021
Client Requested Due Date	: 28-Oct-2021	Scheduled Reporting Date	: 28-Oct-2021

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 10.2 - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 3 / 3

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- ### Summary of Sample(s) and Requested Analysis

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Laboratory sample ID	Sampling date / time	Sample ID
-------------------------	-------------------------	-----------

ES2138103-001	14-Oct-2021 00:00	QA4 0.00-0.10	✓	✓	
ES2138103-002	14-Oct-2021 00:00	QA5 0.40-0.50	✓	✓	
ES2138103-003	14-Oct-2021 00:00	QA6 0.40-0.50	✓		✓

Sample(s) have been received within the recommended holding times for the requested analysis.

- A4 - AU Tax Invoice (INV)

Email apinvoices@douglaspartners.com.au

- *AU Certificate of Analysis - NATA (COA)

Email brent.kerry@douglaspartners.com

- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)

Email brent.kerry@douglaspartners.com

- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)

Email brent.kerry@douglaspartners.com.au

- A4 - AU Sample Receipt Notification - Environmental HT (SRN)

Email brent.kerry@douglaspartners.com.au

- A4 - AU Tax Invoice (INV)

Email brent.kerry@douglaspartners.com.au

- Chain of Custody (CoC) (COC)

Email brent.kerry@douglaspartners.com.au

- EDI Format - ESDAT (ESDAT)

Email brent.kerry@douglaspartners.com.au

- EDI Format - XTab (XTAB)

Email brent.kerry@douglaspartners.com.au

CERTIFICATE OF ANALYSIS 291052

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	<u>202936.02, Mount White</u>
Number of Samples	4 Material
Date samples received	16/03/2022
Date completed instructions received	16/03/2022

Analysis Details

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

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

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

Report Details

Date results requested by	17/03/2022
Date of Issue	17/03/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Wonnie Condos
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Asbestos ID - materials					
Our Reference		291052-1	291052-2	291052-3	291052-4
Your Reference	UNITS	203/FC	208/FC	211/FC	216/FC
Depth		-	-	-	-
Date Sampled		9/03/2022	9/03/2022	9/03/2022	9/03/2022
Type of sample		Material	Material	Material	Material
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Mass / Dimension of Sample	-	90x70x5mm	45x25x5mm	90x45x5mm	115x75x5mm
Sample Description	-	Grey fibre cement material	Grey fibre cement material	Brown fibre cement material	Brown fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected
		Amosite asbestos detected	Amosite asbestos detected	Amosite asbestos detected	Amosite asbestos detected
		Crocidolite asbestos detected	Crocidolite asbestos detected	Crocidolite asbestos detected	Crocidolite asbestos detected
Trace Analysis	-	[NT]	[NT]	[NT]	[NT]

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

Result Definitions

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

FPM - ENVID/Form COC 02

CERTIFICATE OF ANALYSIS 291052-A

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	<u>202936.02, Mount White</u>
Number of Samples	4 Material, 4 Soil
Date samples received	17/03/2022
Date completed instructions received	17/03/2022

Analysis Details

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

Report Details

Date results requested by	18/03/2022
Date of Issue	18/03/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

Analysed by Asbestos Approved Analyst: Panika Wongchanda
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By

Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Asbestos ID - soils NEPM					
Our Reference		291052-A-5	291052-A-6	291052-A-7	291052-A-8
Your Reference	UNITS	203/0.2	208/0.1	211/0.2	216/0.2
Date Sampled		9/03/2022	9/03/2022	9/03/2022	9/03/2022
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	18/03/2022	18/03/2022	18/03/2022	18/03/2022
Sample mass tested	g	848.09	575.88	613.58	805.91
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected Synthetic mineral fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos ^{#1}	g/kg	1.4790	<0.1	<0.1	0.4329
Asbestos ID in soil <0.1g/kg*	-	See Above	No visible asbestos detected	No visible asbestos detected	See Above
ACM >7mm Estimation*	g	1.2543	—	—	0.3489
FA and AF Estimation*	g	—	—	—	—
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	<p>Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004.</p> <p>Results reported denoted with * are outside our scope of NATA accreditation.</p> <p>NOTE ^{#1} Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF)</p> <p>NOTE ^{#2} The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.</p> <p>Estimation = Estimated asbestos weight</p> <p>Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.</p>

Result Definitions

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

Report Comments

Asbestos-ID in soil: NEPM

This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Factual description of asbestos identified in the soil samples: NEPM

Sample 291052-A-5; Chrysotile asbestos identified in 8.3619g of fibre cement material >7mm

Sample 291052-A-8; Chrysotile, Amosite and Crocidolite asbestos identified in 2.3259g of fibre cement material >7mm

[illegible]

CERTIFICATE OF ANALYSIS 291049

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	<u>202936.02, Mount White</u>
Number of Samples	27 Soil, 1 Water
Date samples received	16/03/2022
Date completed instructions received	16/03/2022

Analysis Details

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

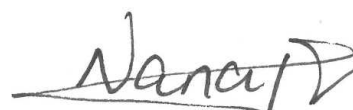
Report Details

Date results requested by	17/03/2022
Date of Issue	30/03/2022
Reissue Details	This report replaces R00 created on 17/03/2022 due to: Sample ID Amended (Client Request)
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Results Approved By

Dragana Tomas, Senior Chemist
 Josh Williams, Organics and LC Supervisor
 Thomas Beenie, Lab Technician

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		291049-1	291049-2	291049-3	291049-4	291049-5
Your Reference	UNITS	221/0.15	221/0.3	222/0.1	222/0.3	223/0.1
Depth		0.1-0.2	0.2-0.3	0.0-0.1	0.3-0.4	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	97	100	97	102	97

vTRH(C6-C10)/BTEXN in Soil

Our Reference		291049-6	291049-7	291049-8	291049-9	291049-10
Your Reference	UNITS	224/0.1	225/0.1	226/0.1	227/0.1	228/0.1
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	96	85	96	95

vTRH(C6-C10)/BTEXN in Soil

Our Reference		291049-11	291049-12	291049-13	291049-14	291049-15
Your Reference	UNITS	229/0.1	230/0.1	231/0.1	232/0.1	233/0.2
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.1-0.2
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	95	105	98	101

vTRH(C6-C10)/BTEXN in Soil

Our Reference		291049-16	291049-17	291049-18	291049-19	291049-20
Your Reference	UNITS	233/0.35	233/0.5	234/0.1	235/0.05	236/0.25
Depth		0.3-0.4	0.4-0.5	0.0-0.1	0.0-0.1	0.2-0.3
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	97	99	104	92	80

vTRH(C6-C10)/BTEXN in Soil

Our Reference		291049-21	291049-22	291049-23	291049-24	291049-25
Your Reference	UNITS	236/0.35	237/0.05	238/0.05	239/0.05	240/0.05
Depth		0.3-0.4	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	94	103	98	93

vTRH(C6-C10)/BTEXN in Soil

Our Reference		291049-26	291049-27
Your Reference	UNITS	QA1	QA3
Depth		0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022
Type of sample		Soil	Soil
Date extracted	-	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	84

svTRH (C10-C40) in Soil

Our Reference		291049-1	291049-2	291049-3	291049-4	291049-5
Your Reference	UNITS	221/0.15	221/0.3	222/0.1	222/0.3	223/0.1
Depth		0.1-0.2	0.2-0.3	0.0-0.1	0.3-0.4	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	660	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	46,000	<100	110	<100	160
TRH C ₂₉ - C ₃₆	mg/kg	23,000	<100	400	<100	610
Total +ve TRH (C10-C36)	mg/kg	70,000	<50	510	<50	770
TRH >C ₁₀ -C ₁₆	mg/kg	2,500	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	2,500	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	65,000	<100	410	<100	590
TRH >C ₃₄ -C ₄₀	mg/kg	8,900	<100	380	<100	650
Total +ve TRH (>C10-C40)	mg/kg	76,000	<50	790	<50	1,200
Surrogate o-Terphenyl	%	#	86	88	95	89

svTRH (C10-C40) in Soil

Our Reference		291049-6	291049-7	291049-8	291049-9	291049-10
Your Reference	UNITS	224/0.1	225/0.1	226/0.1	227/0.1	228/0.1
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	1,800	<100	200	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	1,300	<100	250	<100	110
Total +ve TRH (C10-C36)	mg/kg	3,100	<50	450	<50	110
TRH >C ₁₀ -C ₁₆	mg/kg	170	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	170	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	2,600	<100	360	<100	180
TRH >C ₃₄ -C ₄₀	mg/kg	1,000	<100	240	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	3,700	<50	600	<50	180
Surrogate o-Terphenyl	%	#	87	107	100	94

svTRH (C10-C40) in Soil

Our Reference		291049-11	291049-12	291049-13	291049-14	291049-15
Your Reference	UNITS	229/0.1	230/0.1	231/0.1	232/0.1	233/0.2
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.1-0.2
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	160	210	170	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	590	590	630	<100	<100
Total +ve TRH (C10-C36)	mg/kg	750	800	800	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	570	600	590	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	720	610	740	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	1,300	1,200	1,300	<50	<50
Surrogate o-Terphenyl	%	89	95	97	89	86

svTRH (C10-C40) in Soil

Our Reference		291049-16	291049-17	291049-18	291049-19	291049-20
Your Reference	UNITS	233/0.35	233/0.5	234/0.1	235/0.05	236/0.25
Depth		0.3-0.4	0.4-0.5	0.0-0.1	0.0-0.1	0.2-0.3
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	580	<100	130	<100	210
TRH C ₂₉ - C ₃₆	mg/kg	660	<100	230	<100	480
Total +ve TRH (C10-C36)	mg/kg	1,200	<50	360	<50	690
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	1,100	<100	290	<100	520
TRH >C ₃₄ -C ₄₀	mg/kg	520	<100	200	<100	600
Total +ve TRH (>C10-C40)	mg/kg	1,600	<50	490	<50	1,100
Surrogate o-Terphenyl	%	87	84	98	89	98

svTRH (C10-C40) in Soil

Our Reference		291049-21	291049-22	291049-23	291049-24	291049-25
Your Reference	UNITS	236/0.35	237/0.05	238/0.05	239/0.05	240/0.05
Depth		0.3-0.4	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	85	90	90	92	89

svTRH (C10-C40) in Soil

Our Reference		291049-26	291049-27
Your Reference	UNITS	QA1	QA3
Depth		0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022
Type of sample		Soil	Soil
Date extracted	-	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	190	260
TRH C ₂₉ - C ₃₆	mg/kg	560	320
Total +ve TRH (C10-C36)	mg/kg	750	580
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	540	470
TRH >C ₃₄ -C ₄₀	mg/kg	580	290
Total +ve TRH (>C10-C40)	mg/kg	1,100	760
Surrogate o-Terphenyl	%	96	107

PAHs in Soil						
Our Reference		291049-1	291049-2	291049-3	291049-4	291049-5
Your Reference	UNITS	221/0.15	221/0.3	222/0.1	222/0.3	223/0.1
Depth		0.1-0.2	0.2-0.3	0.0-0.1	0.3-0.4	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Naphthalene	mg/kg	16	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	9.5	<0.1	0.2	<0.1	0.1
Acenaphthene	mg/kg	540	0.2	<0.1	<0.1	<0.1
Fluorene	mg/kg	470	0.2	0.1	<0.1	<0.1
Phenanthrene	mg/kg	3,400	1.9	0.7	<0.1	0.2
Anthracene	mg/kg	820	0.6	0.2	<0.1	<0.1
Fluoranthene	mg/kg	6,300	4.3	1.3	<0.1	0.6
Pyrene	mg/kg	5,400	3.4	1.2	<0.1	0.6
Benzo(a)anthracene	mg/kg	3,400	1.9	1.1	<0.1	0.5
Chrysene	mg/kg	2,800	1.7	0.7	<0.1	0.3
Benzo(b,j+k)fluoranthene	mg/kg	4,800	4.9	3.0	<0.2	1
Benzo(a)pyrene	mg/kg	2,600	1.2	0.79	<0.05	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	1,300	0.7	0.5	<0.1	0.3
Dibenzo(a,h)anthracene	mg/kg	270	0.1	0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	1,400	0.7	0.7	<0.1	0.4
Total +ve PAH's	mg/kg	34,000	22	11	<0.05	4.7
Benzo(a)pyrene TEQ calc (zero)	mg/kg	3,900	2.1	1.4	<0.5	0.6
Benzo(a)pyrene TEQ calc(half)	mg/kg	3,900	2.1	1.4	<0.5	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	3,900	2.1	1.4	<0.5	0.7
Surrogate <i>p</i> -Terphenyl-d14	%	90	97	81	92	77

PAHs in Soil						
Our Reference		291049-6	291049-7	291049-8	291049-9	291049-10
Your Reference	UNITS	224/0.1	225/0.1	226/0.1	227/0.1	228/0.1
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Naphthalene	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	5.2	<0.1	0.7	0.2	0.5
Acenaphthene	mg/kg	16	<0.1	0.2	0.1	0.2
Fluorene	mg/kg	18	<0.1	0.6	0.1	0.3
Phenanthrene	mg/kg	120	<0.1	4.9	1.4	6.8
Anthracene	mg/kg	24	<0.1	1.5	0.4	1.4
Fluoranthene	mg/kg	170	<0.1	14	4.2	18
Pyrene	mg/kg	170	<0.1	12	3.7	16
Benzo(a)anthracene	mg/kg	74	<0.1	7.5	2.3	8.8
Chrysene	mg/kg	81	<0.1	6.7	2.2	9.1
Benzo(b,j+k)fluoranthene	mg/kg	100	<0.2	22	7.4	16
Benzo(a)pyrene	mg/kg	42	<0.05	5.1	1.8	9.4
Indeno(1,2,3-c,d)pyrene	mg/kg	21	<0.1	3.9	1.3	3.8
Dibenzo(a,h)anthracene	mg/kg	7.3	<0.1	1.0	0.3	1.2
Benzo(g,h,i)perylene	mg/kg	28	<0.1	4.6	1.4	7.6
Total +ve PAH's	mg/kg	870	<0.05	85	27	99
Benzo(a)pyrene TEQ calc (zero)	mg/kg	70	<0.5	9.6	3.2	14
Benzo(a)pyrene TEQ calc(half)	mg/kg	70	<0.5	9.6	3.2	14
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	70	<0.5	9.6	3.2	14
Surrogate p-Terphenyl-d14	%	90	90	86	101	95

PAHs in Soil						
Our Reference		291049-11	291049-12	291049-13	291049-14	291049-15
Your Reference	UNITS	229/0.1	230/0.1	231/0.1	232/0.1	233/0.2
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.1-0.2
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.2	0.1	0.3	<0.1
Acenaphthene	mg/kg	<0.1	0.4	<0.1	0.2	<0.1
Fluorene	mg/kg	<0.1	0.4	<0.1	0.4	<0.1
Phenanthrene	mg/kg	0.1	3.4	<0.1	3.6	0.4
Anthracene	mg/kg	<0.1	0.8	<0.1	0.8	0.1
Fluoranthene	mg/kg	0.6	9.7	0.7	11	2.3
Pyrene	mg/kg	0.6	7.8	0.8	9.2	2.0
Benzo(a)anthracene	mg/kg	0.6	4.5	0.9	4.5	1
Chrysene	mg/kg	0.3	4.0	0.6	3.6	1.1
Benzo(b,j+k)fluoranthene	mg/kg	2.3	16	3.0	9.1	2.2
Benzo(a)pyrene	mg/kg	0.58	4.2	0.85	2.9	1.8
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	2.4	0.4	1.8	1.5
Dibenzo(a,h)anthracene	mg/kg	0.1	0.6	0.1	0.6	0.2
Benzo(g,h,i)perylene	mg/kg	0.6	2.8	0.6	2.4	1.3
Total +ve PAH's	mg/kg	6.4	57	8.1	50	14
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.0	7.2	1.4	5.1	2.4
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.0	7.2	1.4	5.1	2.4
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.0	7.2	1.4	5.1	2.4
Surrogate p-Terphenyl-d14	%	79	84	78	87	93

PAHs in Soil						
Our Reference		291049-16	291049-17	291049-18	291049-19	291049-20
Your Reference	UNITS	233/0.35	233/0.5	234/0.1	235/0.05	236/0.25
Depth		0.3-0.4	0.4-0.5	0.0-0.1	0.0-0.1	0.2-0.3
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.4
Acenaphthylene	mg/kg	0.5	<0.1	0.1	<0.1	2.2
Acenaphthene	mg/kg	1.3	<0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	1.5	<0.1	<0.1	<0.1	3.2
Phenanthrene	mg/kg	33	0.5	1.8	0.1	13
Anthracene	mg/kg	8.2	0.1	0.5	<0.1	3.8
Fluoranthene	mg/kg	84	2.2	10	0.4	13
Pyrene	mg/kg	70	1.9	9.4	0.4	9.4
Benzo(a)anthracene	mg/kg	34	1	5.1	0.2	4.8
Chrysene	mg/kg	30	1	4.9	0.2	4.4
Benzo(b,j+k)fluoranthene	mg/kg	62	2.0	10	0.5	8.0
Benzo(a)pyrene	mg/kg	43	1.7	9.2	0.4	7.2
Indeno(1,2,3-c,d)pyrene	mg/kg	34	1.4	7.7	0.4	5.6
Dibenzo(a,h)anthracene	mg/kg	5.6	0.2	1.0	<0.1	0.8
Benzo(g,h,i)perylene	mg/kg	33	1.2	6.8	0.4	4.2
Total +ve PAH's	mg/kg	440	13	67	3.1	81
Benzo(a)pyrene TEQ calc (zero)	mg/kg	62	2.3	13	0.6	9.9
Benzo(a)pyrene TEQ calc(half)	mg/kg	62	2.3	13	0.6	9.9
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	62	2.3	13	0.7	9.9
Surrogate p-Terphenyl-d14	%	88	92	88	88	88

PAHs in Soil						
Our Reference		291049-21	291049-22	291049-23	291049-24	291049-25
Your Reference	UNITS	236/0.35	237/0.05	238/0.05	239/0.05	240/0.05
Depth		0.3-0.4	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.1	0.1	0.2	0.7
Pyrene	mg/kg	<0.1	0.1	0.1	0.2	0.6
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	0.4
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	1
Benzo(a)pyrene	mg/kg	<0.05	0.1	0.1	0.2	0.80
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1	0.1	0.2	0.7
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.2	0.5
Total +ve PAH's	mg/kg	<0.05	0.4	0.4	1.4	5.3
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	1.0
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	1.1
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	1.1
Surrogate p-Terphenyl-d14	%	96	89	91	90	88

PAHs in Soil			
Our Reference		291049-26	291049-27
Your Reference	UNITS	QA1	QA3
Depth		0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022
Type of sample		Soil	Soil
Date extracted	-	16/03/2022	16/03/2022
Date analysed	-	16/03/2022	16/03/2022
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.7
Acenaphthene	mg/kg	<0.1	0.3
Fluorene	mg/kg	<0.1	0.3
Phenanthrene	mg/kg	0.2	3.7
Anthracene	mg/kg	<0.1	0.7
Fluoranthene	mg/kg	0.5	16
Pyrene	mg/kg	0.4	15
Benzo(a)anthracene	mg/kg	0.3	9.6
Chrysene	mg/kg	0.3	9.6
Benzo(b,j+k)fluoranthene	mg/kg	0.6	20
Benzo(a)pyrene	mg/kg	0.52	16
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	13
Dibenzo(a,h)anthracene	mg/kg	<0.1	1.7
Benzo(g,h,i)perylene	mg/kg	0.3	10
Total +ve PAH's	mg/kg	3.6	120
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.7	22
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.7	22
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.8	22
Surrogate <i>p</i> -Terphenyl-d14	%	84	106

Moisture						
Our Reference	UNITS	291049-1	291049-2	291049-3	291049-4	291049-5
Your Reference		221/0.15	221/0.3	222/0.1	222/0.3	223/0.1
Depth		0.1-0.2	0.2-0.3	0.0-0.1	0.3-0.4	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Moisture	%	24	14	13	9.4	6.5

Moisture						
Our Reference	UNITS	291049-6	291049-7	291049-8	291049-9	291049-10
Your Reference		224/0.1	225/0.1	226/0.1	227/0.1	228/0.1
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Moisture	%	11	12	13	15	13

Moisture						
Our Reference	UNITS	291049-11	291049-12	291049-13	291049-14	291049-15
Your Reference		229/0.1	230/0.1	231/0.1	232/0.1	233/0.2
Depth		0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.1-0.2
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Moisture	%	6.4	7.2	12	17	7.5

Moisture						
Our Reference	UNITS	291049-16	291049-17	291049-18	291049-19	291049-20
Your Reference		233/0.35	233/0.5	234/0.1	235/0.05	236/0.25
Depth		0.3-0.4	0.4-0.5	0.0-0.1	0.0-0.1	0.2-0.3
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Moisture	%	4.9	3.2	6.8	10	5.1

Moisture						
Our Reference		291049-21	291049-22	291049-23	291049-24	291049-25
Your Reference	UNITS	236/0.35	237/0.05	238/0.05	239/0.05	240/0.05
Depth		0.3-0.4	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/03/2022	16/03/2022	16/03/2022	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022	17/03/2022	17/03/2022	17/03/2022
Moisture	%	13	11	7.7	11	12

Moisture			
Our Reference		291049-26	291049-27
Your Reference	UNITS	QA1	QA3
Depth		0.0-0.1	0.0-0.1
Date Sampled		11/03/2022	11/03/2022
Type of sample		Soil	Soil
Date prepared	-	16/03/2022	16/03/2022
Date analysed	-	17/03/2022	17/03/2022
Moisture	%	14	15

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	291049-28
Your Reference		RB1
Depth		-
Date Sampled		11/03/2022
Type of sample		Water
Date extracted	-	16/03/2022
Date analysed	-	16/03/2022
TRH C ₆ - C ₉	µg/L	<10
TRH C ₆ - C ₁₀	µg/L	<10
TRH C ₆ - C ₁₀ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	94
Surrogate toluene-d8	%	95
Surrogate 4-BFB	%	101

svTRH (C10-C40) in Water		
Our Reference		291049-28
Your Reference	UNITS	RB1
Depth		-
Date Sampled		11/03/2022
Type of sample		Water
Date extracted	-	16/03/2022
Date analysed	-	16/03/2022
TRH C ₁₀ - C ₁₄	µg/L	<50
TRH C ₁₅ - C ₂₈	µg/L	<100
TRH C ₂₉ - C ₃₆	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C ₁₀ - C ₁₆	µg/L	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50
TRH >C ₁₆ - C ₃₄	µg/L	<100
TRH >C ₃₄ - C ₄₀	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	94

PAHs in Water		
Our Reference		291049-28
Your Reference	UNITS	RB1
Depth		-
Date Sampled		11/03/2022
Type of sample		Water
Date extracted	-	16/03/2022
Date analysed	-	16/03/2022
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate <i>p</i> -Terphenyl-d14	%	91

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Water samples are analysed directly by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Method ID	Methodology Summary
Org-023	<p>Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.</p> <p>Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.</p>

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-23	291049-2
Date extracted	-			16/03/2022	1	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Date analysed	-			16/03/2022	1	16/03/2022	16/03/2022		16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	25	Org-023	<25	1	<25	<25	0	81	75
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	<25	1	<25	<25	0	81	75
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	76	73
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	91	86
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	75	68
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	81	75
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	78	71
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	96	1	97	94	3	93	89

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-24	291049-22
Date extracted	-			[NT]	11	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Date analysed	-			[NT]	11	16/03/2022	16/03/2022		16/03/2022	16/03/2022
TRH C ₆ - C ₉	mg/kg	25	Org-023	[NT]	11	<25	<25	0	90	80
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	[NT]	11	<25	<25	0	90	80
Benzene	mg/kg	0.2	Org-023	[NT]	11	<0.2	<0.2	0	90	78
Toluene	mg/kg	0.5	Org-023	[NT]	11	<0.5	<0.5	0	102	91
Ethylbenzene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	79	82
m+p-xylene	mg/kg	2	Org-023	[NT]	11	<2	<2	0	89	75
o-Xylene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	84	73
Naphthalene	mg/kg	1	Org-023	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	11	95	99	4	104	91

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	16/03/2022	16/03/2022		[NT]	[NT]
Date analysed	-			[NT]	21	16/03/2022	16/03/2022		[NT]	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	21	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	21	94	105	11	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-23	291049-2
Date extracted	-			16/03/2022	1	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Date analysed	-			17/03/2022	1	17/03/2022	17/03/2022		17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	<50	1	660	960	37	107	116
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	<100	1	46000	53000	14	105	111
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	<100	1	23000	26000	12	121	119
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	<50	1	2500	3000	18	107	116
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	<100	1	65000	74000	13	105	111
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	<100	1	8900	10000	12	121	119
Surrogate o-Terphenyl	%		Org-020	100	1	#	#		99	110

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-24	291049-22
Date extracted	-			[NT]	11	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Date analysed	-			[NT]	11	17/03/2022	17/03/2022		17/03/2022	17/03/2022
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	11	<50	<50	0	97	85
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	11	160	140	13	96	92
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	11	590	550	7	121	119
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	11	<50	<50	0	97	85
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	11	570	510	11	96	92
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	11	720	690	4	121	119
Surrogate o-Terphenyl	%		Org-020	[NT]	11	89	94	5	92	89

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	16/03/2022	16/03/2022		[NT]	[NT]
Date analysed	-			[NT]	21	17/03/2022	17/03/2022		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	21	85	89	5	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-23	291049-2
Date extracted	-			16/03/2022	1	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Date analysed	-			16/03/2022	1	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	16	21	27	92	93
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	9.5	13	31	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	540	780	36	89	99
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	470	680	37	97	107
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	3400	4900	36	100	100
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	820	1300	45	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	6300	9200	37	98	100
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	5400	7900	38	99	106
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	3400	4900	36	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	2800	4000	35	91	114
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	4800	5400	12	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	2600	3900	40	82	82
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	1300	2000	42	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	270	330	20	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	1400	2100	40	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	103	1	90	114	24	91	97

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-24	291049-22
Date extracted	-			[NT]	11	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Date analysed	-			[NT]	11	16/03/2022	16/03/2022		16/03/2022	16/03/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	95	90
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	11	0.1	0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	97	87
Fluorene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	101	90
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	11	0.1	<0.1	0	108	98
Anthracene	mg/kg	0.1	Org-022/025	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	11	0.6	0.4	40	102	93
Pyrene	mg/kg	0.1	Org-022/025	[NT]	11	0.6	0.3	67	107	97
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	0.6	0.4	40	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	11	0.3	0.2	40	99	89
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	11	2.3	1	79	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	11	0.58	0.4	37	112	138
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	11	0.4	0.3	29	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	11	0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	11	0.6	0.5	18	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	11	79	89	12	100	94

QUALITY CONTROL: PAHs in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	16/03/2022	16/03/2022		[NT]	[NT]
Date analysed	-			[NT]	21	16/03/2022	16/03/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	21	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	21	96	92	4	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			16/03/2022	[NT]	[NT]	[NT]	[NT]	16/03/2022	[NT]
Date analysed	-			16/03/2022	[NT]	[NT]	[NT]	[NT]	16/03/2022	[NT]
TRH C ₆ - C ₉	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	112	[NT]
TRH C ₆ - C ₁₀	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	112	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	115	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	97	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate toluene-d8	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate 4-BFB	%		Org-023	103	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			16/03/2022	[NT]	[NT]	[NT]	[NT]	16/03/2022	[NT]
Date analysed	-			17/03/2022	[NT]	[NT]	[NT]	[NT]	17/03/2022	[NT]
TRH C ₁₀ - C ₁₄	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	85	[NT]
TRH C ₁₅ - C ₂₈	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH C ₂₉ - C ₃₆	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	95	[NT]
TRH >C ₁₀ - C ₁₆	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	85	[NT]
TRH >C ₁₆ - C ₃₄	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	82	[NT]
TRH >C ₃₄ - C ₄₀	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	95	[NT]
Surrogate o-Terphenyl	%		Org-020	97	[NT]	[NT]	[NT]	[NT]	111	[NT]

QUALITY CONTROL: PAHs in Water					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			16/03/2022	[NT]	[NT]	[NT]	[NT]	16/03/2022	[NT]
Date analysed	-			16/03/2022	[NT]	[NT]	[NT]	[NT]	16/03/2022	[NT]
Naphthalene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Acenaphthylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Fluorene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
Phenanthrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	111	[NT]
Benzo(a)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	77	[NT]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-022/025	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	132	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	1	Org-022/025	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	109	[NT]	[NT]	[NT]	[NT]	99	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of samples 291049-11, 11d.

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate is not possible to report as the high concentration of analytes in samples 291049-1,1d,6 have caused interference.

CERTIFICATE OF ANALYSIS 291049-A

Client Details

Client	Douglas Partners Tuggerah
Attention	Brent Kerry
Address	Unit 5, 3 Teamster Close, Tuggerah, NSW, 2259

Sample Details

Your Reference	<u>202936.02, Mount White</u>
Number of Samples	Additional Testing on 4 Soils
Date samples received	16/03/2022
Date completed instructions received	18/03/2022

Analysis Details

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

Report Details

Date results requested by	22/03/2022
Date of Issue	22/03/2022
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Diego Bigolin, Inorganics Supervisor
 Dragana Tomas, Senior Chemist
 Hannah Nguyen, Metals Supervisor
 Josh Williams, Organics and LC Supervisor
 Priya Samarawickrama, Senior Chemist

Authorised By



Nancy Zhang, Laboratory Manager

Coal Tar					
Our Reference		291049-A-1	291049-A-6	291049-A-10	291049-A-16
Your Reference	UNITS	221/0.15	224/0.1	228/0.1	233/0.35
Depth		0.1-0.2	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Date analysed	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Presence of Coal Tar*	-	Absent	Absent	Absent	Absent

Misc Soil - Inorg					
Our Reference		291049-A-1	291049-A-6	291049-A-10	291049-A-16
Your Reference	UNITS	221/0.15	224/0.1	228/0.1	233/0.35
Depth		0.1-0.2	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Date analysed	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5

Misc Inorg - Soil					
Our Reference		291049-A-1	291049-A-6	291049-A-10	291049-A-16
Your Reference	UNITS	221/0.15	224/0.1	228/0.1	233/0.35
Depth		0.1-0.2	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Date analysed	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
pH 1:5 soil:water	pH Units	8.4	6.1	6.9	6.9
Total Organic Carbon (Walkley Black)	mg/kg	250,000	28,000	30,000	19,000

CEC					
Our Reference		291049-A-1	291049-A-6	291049-A-10	291049-A-16
Your Reference	UNITS	221/0.15	224/0.1	228/0.1	233/0.35
Depth		0.1-0.2	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Date analysed	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Exchangeable Ca	meq/100g	19	3.4	11	3.4
Exchangeable K	meq/100g	<0.1	0.1	<0.1	0.3
Exchangeable Mg	meq/100g	0.4	0.3	0.3	0.5
Exchangeable Na	meq/100g	0.2	<0.1	<0.1	0.1
Cation Exchange Capacity	meq/100g	20	3.8	12	4.3

PAHs in TCLP (USEPA 1311)					
Our Reference		291049-A-1	291049-A-6	291049-A-10	291049-A-16
Your Reference	UNITS	221/0.15	224/0.1	228/0.1	233/0.35
Depth		0.1-0.2	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil
pH of soil for fluid# determ.	pH units	7.1	7.6	7.4	7.5
pH of soil TCLP (after HCl)	pH units	1.7	1.7	1.7	1.7
Extraction fluid used	-	1	1	1	1
pH of final Leachate	pH units	6.1	4.9	5.7	5.0
Date extracted	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Date analysed	-	21/03/2022	21/03/2022	21/03/2022	21/03/2022
Naphthalene in TCLP	mg/L	0.003	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	0.030	<0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	0.018	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	0.045	<0.001	<0.001	0.001
Anthracene in TCLP	mg/L	0.010	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	0.020	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	0.014	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	0.002	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	0.001	<0.001	<0.001	<0.001
Benzo(b,k)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001
Total +ve PAH's	mg/L	0.14	NIL (+)VE	NIL (+)VE	0.0013
Surrogate p-Terphenyl-d14	%	105	108	111	113

PAHs in water leach					
Our Reference		291049-A-1	291049-A-6	291049-A-10	291049-A-16
Your Reference	UNITS	221/0.15	224/0.1	228/0.1	233/0.35
Depth		0.1-0.2	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		11/03/2022	11/03/2022	11/03/2022	11/03/2022
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
Date analysed	-	22/03/2022	22/03/2022	22/03/2022	22/03/2022
pH of final Leachate	pH units	7.2	7.7	6.9	7.1
Naphthalene in ASLP	mg/L	0.001	<0.001	<0.001	<0.001
Acenaphthylene in ASLP	mg/L	<0.001	<0.001	<0.001	<0.001
Acenaphthene in ASLP	mg/L	0.029	<0.001	<0.001	<0.001
Fluorene in ASLP	mg/L	0.015	<0.001	<0.001	<0.001
Phenanthrene in ASLP	mg/L	0.042	0.006	<0.001	0.001
Anthracene in ASLP	mg/L	0.012	<0.001	<0.001	<0.001
Fluoranthene in ASLP	mg/L	0.044	<0.001	<0.001	<0.001
Pyrene in ASLP	mg/L	0.033	<0.001	<0.001	<0.001
Benzo(a)anthracene in ASLP	mg/L	0.013	<0.001	<0.001	<0.001
Chrysene in ASLP	mg/L	0.006	<0.001	<0.001	<0.001
Benzo(bjk)fluoranthene in ASLP	mg/L	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in ASLP	mg/L	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in ASLP	mg/L	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in ASLP	mg/L	<0.001	<0.001	<0.001	<0.001
Surrogate <i>p</i> -Terphenyl-d ₁₄	%	100	90	101	98

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
INORG-004	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-004	<p>Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311.</p> <p>Please note that the mass used may be scaled down from default based on sample mass available.</p> <p>Samples are stored at 2-6oC before and after leachate preparation.</p>
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Inorg-036	Total Organic Carbon or Matter - A titrimetric method that measures the oxidisable organic content of soils.
Metals-020	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-OES analytical finish.
Org-022/025	Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025 ASLP	ASLP Leachates are extracted with Dichloromethane and analysed by GC-MS/GC-MSMS.
RTA T542	Determination of Phenol in core samples as per RTA test method T542. This procedure gives an indication of whether a sample of asphalt has been made with coal tar. The coal tar method gives an approximate result with a high degree of uncertainty.

Client Reference: 202936.02, Mount White

QUALITY CONTROL: Misc Soil - Inorg						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			21/03/2022	[NT]	[NT]	[NT]	[NT]	21/03/2022	[NT]
Date analysed	-			21/03/2022	[NT]	[NT]	[NT]	[NT]	21/03/2022	[NT]
Total Phenolics (as Phenol)	mg/kg	5	Inorg-031	<5	[NT]	[NT]	[NT]	[NT]	104	[NT]

Client Reference: 202936.02, Mount White

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			21/03/2022	10	21/03/2022	21/03/2022		21/03/2022	[NT]
Date analysed	-			21/03/2022	10	21/03/2022	21/03/2022		21/03/2022	[NT]
pH 1:5 soil:water	pH Units		Inorg-001	[NT]	10	6.9	[NT]		101	[NT]
Total Organic Carbon (Walkley Black)	mg/kg	1000	Inorg-036	<1000	10	30000	33000	10	93	[NT]

QUALITY CONTROL: CEC				Duplicate				Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	291049-A-10
Date prepared	-			22/03/2022	1	22/03/2022	22/03/2022		22/03/2022	22/03/2022
Date analysed	-			22/03/2022	1	22/03/2022	22/03/2022		22/03/2022	22/03/2022
Exchangeable Ca	meq/100g	0.1	Metals-020	<0.1	1	19	17	11	109	#
Exchangeable K	meq/100g	0.1	Metals-020	<0.1	1	<0.1	<0.1	0	110	111
Exchangeable Mg	meq/100g	0.1	Metals-020	<0.1	1	0.4	0.4	0	106	110
Exchangeable Na	meq/100g	0.1	Metals-020	<0.1	1	0.2	0.2	0	93	100

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			21/03/2022	[NT]	[NT]	[NT]	[NT]	21/03/2022	[NT]
Date analysed	-			21/03/2022	[NT]	[NT]	[NT]	[NT]	21/03/2022	[NT]
Naphthalene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	126	[NT]
Acenaphthylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	117	[NT]
Fluorene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	118	[NT]
Phenanthrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	110	[NT]
Anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	114	[NT]
Pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	115	[NT]
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	83	[NT]
Benzo(bjk)fluoranthene in TCLP	mg/L	0.002	Org-022/025	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	124	[NT]
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-022/025	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	116	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: PAHs in water leach					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			22/03/2022	[NT]	[NT]	[NT]	[NT]	22/03/2022	[NT]
Date analysed	-			22/03/2022	[NT]	[NT]	[NT]	[NT]	22/03/2022	[NT]
Naphthalene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	111	[NT]
Acenaphthylene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	92	[NT]
Fluorene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	128	[NT]
Anthracene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	109	[NT]
Pyrene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	111	[NT]
Benzo(a)anthracene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	76	[NT]
Benzo(bjk)fluoranthene in ASLP	mg/L	0.002	Org-022/025 ASLP	<0.002	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	102	[NT]
Indeno(1,2,3-c,d)pyrene - ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene in ASLP	mg/L	0.001	Org-022/025 ASLP	<0.001	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d ₁₄	%		Org-022/025 ASLP	108	[NT]	[NT]	[NT]	[NT]	105	[NT]

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

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

CEC - # High spike recovery was obtained for this sample. The sample was re-digested and re-spiked and the low recovery was confirmed. This is due to matrix interferences. However, an acceptable recovery was obtained for the LCS.

De. 22/3/22.

CERTIFICATE OF ANALYSIS

Work Order : **ES2209437**
Client : **DOUGLAS PARTNERS PTY LTD**
Contact : BRENT KERRY
Address : 96 HERMITAGE ROAD
 WEST RYDE NSW, AUSTRALIA 2114
Telephone : ----
Project : 202936.02
Order number : ----
C-O-C number : ----
Sampler : MJH
Site : Mount White
Quote number : EN/222
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 4
Laboratory : Environmental Division Sydney
Contact : Sepan Mahamad
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61 2 8784 8555
Date Samples Received : 16-Mar-2022 18:20
Date Analysis Commenced : 22-Mar-2022
Issue Date : 24-Mar-2022 14:19



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic 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 Contact 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.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)		Sample ID		QA4	----	----	----	----
		Sampling date / time		11-Mar-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2209437-001	-----	-----	-----	-----
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	22.9	----	----	----	----
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	----	----	----	----
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	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	99.5	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	93.1	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	97.6	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Telephone : + 61-2-8764 8555

Environmental Division
Sydney
Work Order Reference
ES2209437

REC-Soft
6/3/12 12:20
Rev: 25c

QUALITY CONTROL REPORT

Work Order	: ES2209437	Page	: 1 of 4
Client	: DOUGLAS PARTNERS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Contact	: Sepan Mahamad
Address	: 96 HERMITAGE ROAD WEST RYDE NSW, AUSTRALIA 2114	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 202936.02	Date Samples Received	: 16-Mar-2022
Order number	: ----	Date Analysis Commenced	: 22-Mar-2022
C-O-C number	: ----	Issue Date	: 24-Mar-2022
Sampler	: MJH		
Site	: Mount White		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		



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.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic 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 (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4243126)									
EP2202979-003	Anonymous	EA055: Moisture Content	----	0.1	%	8.4	8.0	5.1	0% - 20%
ES2209541-012	Anonymous	EA055: Moisture Content	----	0.1	%	15.1	17.8	16.4	0% - 50%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4242230)									
ES2209440-002	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4243886)									
ES2209437-001	QA4	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4242230)									
ES2209440-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4243886)									
ES2209437-001	QA4	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 4243886)									
ES2209437-001	QA4	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	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		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



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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit			LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4242230)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	90.1	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	91.0	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	90.1	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4243886)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.4	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4242230)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	88.1	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	91.4	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	90.9	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4243886)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	90.9	68.4	128
EP080: BTEXN (QCLot: 4243886)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	99.5	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	104	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	103	65.0	117
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	102	66.0	118
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	106	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	97.7	63.0	119

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**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4242230)							
ES2209440-002	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	92.1	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	102	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	111	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4243886)							
ES2209437-001	QA4	EP080: C6 - C9 Fraction	----	32.5 mg/kg	123	70.0	130



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4242230)							
ES2209440-002	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	99.0	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	106	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	110	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4243886)							
ES2209437-001	QA4	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	122	70.0	130
EP080: BTEXN (QCLot: 4243886)							
ES2209437-001	QA4	EP080: Benzene	71-43-2	2.5 mg/kg	103	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	108	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	113	70.0	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	108	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	110	70.0	130
	EP080: Naphthalene	91-20-3	2.5 mg/kg	106	70.0	130	

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2209437	Page	: 1 of 4
Client	: DOUGLAS PARTNERS PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: BRENT KERRY	Telephone	: +61 2 8784 8555
Project	: 202936.02	Date Samples Received	: 16-Mar-2022
Site	: Mount White	Issue Date	: 24-Mar-2022
Sampler	: MJH	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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



Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QA4	11-Mar-2022	----	----	----	22-Mar-2022	25-Mar-2022	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) QA4	11-Mar-2022	22-Mar-2022	25-Mar-2022	✓	23-Mar-2022	01-May-2022	✓
Soil Glass Jar - Unpreserved (EP080) QA4	11-Mar-2022	23-Mar-2022	25-Mar-2022	✓	23-Mar-2022	25-Mar-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071) QA4	11-Mar-2022	22-Mar-2022	25-Mar-2022	✓	23-Mar-2022	01-May-2022	✓
Soil Glass Jar - Unpreserved (EP080) QA4	11-Mar-2022	23-Mar-2022	25-Mar-2022	✓	23-Mar-2022	25-Mar-2022	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QA4	11-Mar-2022	23-Mar-2022	25-Mar-2022	✓	23-Mar-2022	25-Mar-2022	✓



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	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	8	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
TRH - Semivolatile Fraction	EP071	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
TRH - Semivolatile Fraction	EP071	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
TRH - Semivolatile Fraction	EP071	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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).
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).
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.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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.