ENVIRONMENTAL INVESTIGATION SERVICES

10/05/2017
Report Ref: E29807KR2let-WC

Capital Insight Pty Ltd
77 Berry Street
North Sydney NSW 2060

Attention: Mr Frank Tong

WASTE CLASSIFICATION ASSESSMENT
PROPOSED REFURBISHMENT OF BUILDINGS W6A AND W6B AND CONSTRUCTION OF ADDITIONAL NEW BUILDING AT MACQUARIE UNIVERSITY
SOIL BERM, BUILDINGS W6A AND W6B, MACQUARIE UNIVERSITY, WESTERN ROAD, MACQUARIE PARK

1 INTRODUCTION

Capital Insight Pty Ltd ('the client') commissioned Environmental Investigation Services (EIS)[1] to assign a waste classification to the soil berm stockpiled material located to the south of Building W6A and W6B at Macquarie University, Western Road, Macquarie Park ('the site'). The site location is shown on Figure 1 and sampling for the screening was confined to the soil berm stockpiled material as shown on Figure 2 attached in the appendices.

The purpose of this assessment was to provide a waste classification for the off-site disposal of the material in the soil berm in accordance with the NSW EPA Waste Classification Guidelines - Part 1: Classifying Waste (2014[2]). The assessment was undertaken generally in accordance with an EIS proposal (Ref: EP44436KR) of 27 February 2017 and written acceptance from Capital Insight Pty Ltd by email of 3 April 2017.

A geotechnical investigation was undertaken previously to the waste classification assessment by JK Geotechnics[3] and the results are presented in a separate report (Ref. 29807ZRrpt, dated 4 November 2016).

[1] Environmental consulting division of Jeffery & Katauskas Pty Ltd (J&K)

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

[3] Geotechnical consulting division of J&K

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1.1 Proposed Development Details

EIS understand that buildings W6A (a 9 Storey building) and W6B (3x3 storey buildings) at Macquarie University are to be refurbished and expanded. Building W6A refurbishment works include façade extension and replacement and relocation of the lift and stairs. Building W6B refurbishment works include re-engineering the building to relocate some columns, and adding one floor on top of all buildings.

A new building is proposed to be constructed south of Building W6A. It is understood that a soil berm (divided into 2-3 parts) that is located south of Building W6A will be excavated and removed from the site in order to construct the new building. The total volume of the soil berm is approximately 10,000m^3.

2 SITE INFORMATION

2.1 Site Identification and Description

Table 2-1: Site Identification

Site Address:	Soil Berm and Buildings W6A and W6B, Macquarie University, Western Road, Macquarie Park
Lot & Deposited Plan:	Lot 191 in DP1157041
Current Land Use:	Landscaped soil berm within the tertiary institution premises
Estimated Volume of Soil Berm/Stockpiles (m^3):	Approximately 10,000
Site Area (ha):	Approximately 1.3
Geographical Location of soil berm (approx.):	Latitude: -33.775168^0 Longitude: 151.111056^0
Geographical Location of the site (approx.):	Latitude: - 33.774900^0 Longitude: 151.110936^0

The site is located over the central western section of the Macquarie University campus, at Macquarie Park. The site is bounded by park and walkways to the north, other university buildings to the east and west and a carpark to the south, within the campus. The site is located approximately 60m to the south of Mars Creek.

The site was located within gently undulating topography on a hillside that sloped down to the north-west at about 6°.

The site was occupied by Buildings W6A and W6B, with respective northern and eastern frontages onto the concrete paved, tree lined Wally's Walk and the asphaltic concrete (AC) paved Western Road (see Figures 1 and 2). The roads sloped down to the north at between about 2° and 6°. To the north of the western end of Wally's Walk a grass surfaced area sloped down to the north-west at between about 3° and 5°.

Building W6A comprised a nine storey building and W6B comprised three buildings (each three storey) arranged in a 'horseshoe' shape in plan. The buildings were of concrete frame and brick masonry construction with gravel surfaced courtyard surrounds containing stepped concrete paved walkways.

A concrete pedestrian walkway bridged over Western Road from the north eastern corner of W6B eastwards to the nearby multi-level concrete frame and brick masonry Building W5A.

To the west of Building W6B and to the north of the western end of Building W6A, was a single level framed building with synthetic walls and roof.

An AC paved walkway lined the southern side of Building W6A and sloped down to the west at about 2°. Two grass surfaced fill mounds (soil berm), orientated east-west and bisected by a concrete paved walkway (orientated north-south) were located immediately to the south of the walkway. The toe of the northern side of the western fill mound was supported by a timber retaining wall about 0.5m high with a bicycle shed immediately to the north. A smaller soil mound, bisected by a concrete paved walkway, was located to the east of the eastern fill mound and was deemed to be part of the soil berm. The fill mounds were a maximum of about 5m high (western mound) and 4.3m high (eastern mound), and approximately 2.0m (eastern most mound) and had side slopes between approximately 14° and 18°.

An AC surfaced car park was situated to the south of the fill mounds (soil berm) and sloped down to the north-west at about 6°. The car park extended west to a two level concrete framed car park and extended south to Macquarie Drive (see Figure 1).

A number of garden beds were also located around Buildings W6A and W6B and were supported by timber, brick and concrete retaining walls ranging in height from approximately 0.3m to 1.2m. Numerous medium to large sized trees were present within the landscaped surrounds.

2.2 Background/Historical Information

EIS had undertaken a preliminary Stage 1 Environmental Site Assessment (ESA) at the site in September/October 2016. Soil samples had been collected and analysed from geotechnical boreholes drilled at the site and two hand auger holes drilled within the soil berm. No significant contamination had been identified at the site. However, it had been recommended that additional assessment of the soil mounds/berm be undertaken to better confirm the waste classification.

Based on the historical information obtained during the Stage 1 ESA the land use at the site appeared to include agricultural/grazing or market gardens prior to 1970. The existing buildings, infrastructure and landscaping, including Buildings W6A and W6B and the soil berm, at the Macquarie University campus were progressively developed from 1970 onwards, forming the educational institution. There were no records for the site on the NSW EPA[4] contaminated land registers.

Considering the above information, the waste classification assessment will consider a broad suite of potential contaminants as outlined in Section 4.4.

2.3 Regional Geology

The geological map of Sydney (1983[5]) indicates the site to be underlain by Ashfield Shale of the Wianamatta Group, which typically consists of black to dark grey shale and laminite.

3 ASSESSMENT CRITERIA

3.1 NSW EPA Waste Classification Guidelines

Off-site disposal of fill, contaminated material, stockpiled soil, natural soil, rock excavated as part of the proposed development works is regulated by the Protection of the Environment Operations Act (1997[6]) and associated regulations and guidelines including the Part 1 of the Waste Classification Guidelines.

Soils are classed into the following categories based on the chemical contaminant criteria outlined in the guidelines:

Table 3-1: Waste Categories

Category	Description
General Solid Waste (non-putrescible) (GSW)	• If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as GSW • If TCLP ≤ TCLP1 and SCC ≤ SCC1 then treat as GSW
Restricted Solid Waste (non-putrescible) (RSW)	• If SCC ≤ CT2 then TCLP not needed to classify the soil as RSW • If TCLP ≤ TCLP2 and SCC ≤ SCC2 then treat as RSW
Hazardous Waste (HW)	• If SCC > CT2 then TCLP not needed to classify the soil as HW • If TCLP > TCLP2 and/or SCC > SCC2 then treat as HW
Virgin Excavated Natural Material (VENM)	Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following:

[4] http://www.epa.nsw.gov.au/

[5] *1:100,000 Geological Map of Sydney (Series 9130),* Department of Mineral Resources (1983) [now Department of Primary Industries]

[6] NSW Government, (1997). *Protection of Environment Operations Act.* (POEO Act 1997)

Category	Description
	• That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities; • That does not contain sulfidic ores or other waste; and • Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

4 INVESTIGATION PROCEDURE

4.1 Subsurface Investigation and Soil Sampling

Field work for this investigation was undertaken on 20 April 2017. Soil samples were obtained from 10 test pits excavated for the investigation. The sampling locations are shown on Figure 2 attached in the appendices. The investigation was limited to a maximum depth of 2.0m below ground level (BGL) into the soil berm.

The sample locations were excavated using a 2.7 tonne excavator. Soil samples were obtained directly from the excavator bucket.

Soil samples were collected from the fill material in the soil berm, during the investigation. Samples were also obtained when there was a distinct change in lithology or based on the observations made during the investigation. All samples were recorded on the testpit logs attached in the appendices.

Samples were placed in glass jars with plastic caps and Teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. Sampling personnel used disposable nitrile gloves during sampling activities. The samples were labelled with the job number, sampling location, sampling depth and date.

4.2 Screening for Volatile Organic Compounds (VOCs)

A portable Photoionisation Detector (PID) was used to screen the samples for the presence of VOCs and to assist with selection of samples for further analysis for petroleum hydrocarbons. PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases.

The sensitivity of the PID is dependent on the organic compound and varies for different mixtures of hydrocarbons. Some compounds give relatively high readings and some can be undetectable even though present in identical concentrations. The portable PID is best used semi-quantitatively to compare samples contaminated by the same hydrocarbon source. The PID is calibrated before use by measurement of an isobutylene standard gas. All the PID measurements are quoted as parts per million (ppm) isobutylene equivalents.

4.3 Sample Preservation

Soil samples were preserved by immediate storage in an insulated sample container with ice in accordance with AS4482.1-2005 and AS4482.2-1999[7] as summarised in the following table:

Table 4-1: Soil Sample Preservation and Storage

Analyte	Preservation	Storage
Heavy metals	Unpreserved glass jar with Teflon lined lid	Store at <4°, analysis within 28 days (mercury and Cr[VI]) and 180 days (other metals)
Hydrocarbons, pesticides and other organics	As above	Store at <4°, analysis within 14 days
Asbestos	Sealed plastic bag	None

On completion of the fieldwork, the samples were delivered in the insulated sample container to a NATA registered laboratory for analysis under standard Chain of Custody (COC) procedures.

4.4 Laboratory Analysis

Samples were analysed for a range of potential contaminants based on the site information presented in Section 2. EIS note that a detailed site history assessment was not undertaken, however this was compensated for by analysing the samples for a broad range of potential contaminants.

Fifteen selected soil berm/stockpile soil samples were analysed for the following:

- Heavy metals including: arsenic, cadmium, chromium (total), copper, lead, mercury, nickel and zinc;
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Total Recoverable Hydrocarbons (TRH);
- Monocyclic aromatic hydrocarbons including benzene, toluene, ethylbenzene and xylene (BTEX);
- Organochlorine pesticides (OCPs);
- Organophosphate pesticides (OPPs);
- Polychlorinated biphenyls (PCBs); and
- Asbestos.

Samples were analysed by Envirolab Services (NATA Accreditation Number – 2901) using the analytical methods detailed in the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013[8]). Reference should be made to the laboratory report (Ref: 165655) attached in the appendices for further information. Reference should also be made to the laboratory

[7] *Guide to the Sampling and Investigation of Potentially Contaminated Soil Part2: Volatile Substances,* Standards Australia, 1999 (AS 1999)

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

report (Ref: 154919) attached in the appendices, as the data obtained from the two borehole samples collected from the berm during the Stage 1 ESA in Sept/Oct 2016 was also incorporated within the dataset for this current assessment and is included within the laboratory report 154919.

5 RESULTS OF THE INVESTIGATION

5.1 Subsurface Conditions

The soil berm was grass covered. The fill material within the berm appeared to be generally in layers, typically consisted of silty clay or gravelly silty clay with inclusions of concrete, brick, terracotta and glass fragments in places, underlain by gravelly sandy clay or silty clay or gravelly silty clay of low to medium plasticity and light orange brown mottled grey (with trace of concrete fragments in TP8 and TP9), underlain by gravelly clay or gravelly silty clay of low plasticity and dark orange brown and red brown and mottled red grey in places. Reference should be made to the testpit logs attached in the appendices for further details.

5.2 VOC Screening

PID soil sample headspace readings are presented in the COC documents attached in the appendices. The PID results ranged from 0.0ppm to 0.3ppm equivalent isobutylene. These results indicate PID detectable volatile organic contaminants.

5.3 Laboratory Results

The laboratory results were assessed against the criteria presented in Part 1 of the Waste Classification Guidelines, as summarised previously in this report. The results are presented in the report tables attached in the appendices. The samples analysed from the boreholes drilled into the soil berm during the Stage 1 ESA in Sept/Oct 2016 have also been included with the current dataset. A summary of the results is presented below.

Table 5-1: Summary of Soil Laboratory Results Compared to CT and SCC Criteria

Analyte	No. of Samples Analysed	No. of Results > CT Criteria	No. of Results > SCC Criteria	Comments
Heavy Metals	18	0	0	All results were either below the laboratory practical quantification limits (PQLs) or below the CT1 criteria.
TRH	18	0	0	All results were below the laboratory practical quantitation limits (PQLs).
BTEX	18	0	0	All results were below the laboratory practical quantitation limits (PQLs).

Analyte	No. of Samples Analysed	No. of Results > CT Criteria	No. of Results > SCC Criteria	Comments
Total PAHs	18	0	0	All results were either below the laboratory practical quantification limits (PQLs) or below the CT1 criteria.
Benzo(a)pyrene	18	0	0	All results were either below the laboratory practical quantification limits (PQLs) or below the CT1 criteria.
OCPs & OPPs	17	0	0	All results were below the laboratory PQLs
PCBs	17	0	0	All results were below the laboratory PQLs
Asbestos	17	-	-	Asbestos was not detected in the samples analysed.

6 CONCLUSIONS

6.1 Waste Classification of Fill in the Soil Berm

Based on the results of the assessment, and at the time of reporting, the fill material within the soil berm at the site is classified as **General Solid Waste (non-putrescible)**. Surplus fill should be disposed of to a facility that is licensed by the NSW EPA to receive this waste stream. The facility should be contacted to obtain the required approvals prior to commencement of excavation.

6.2 Recommendations

Any unexpected finds encountered during the site works should be inspected by a suitably qualified environmental consultant from a company that is a member of the Australian Contaminated Land Consultants Association (ACLCA). In the event that the find has the potential to alter the waste classification documented in this report, additional testing and reporting should be undertaken.

6.3 General Information

The fill material must be disposed of to a facility licensed by the NSW EPA to accept the waste. It is the responsibility of the receiving facility to ensure that the material meets their EPA license conditions. EIS accepts no liability whatsoever for illegal or inappropriate disposal of material.

Fill and contaminated soil disposal costs are significant and may affect project viability. These costs should be assessed at an early stage of the project development to avoid significant future unexpected additional costs.

Material classed as VENM must not be mixed with any fill material (including building rubble) as this will invalidate the VENM classification. Where doubt exists about the difference between fill and VENM material an environmental/geotechnical engineer should be contacted for advice.

Section 143 of the POEO Act 1997 states that if waste is transported to a place that cannot lawfully be used as a waste facility for that waste, then the transporter and owner of the waste are each guilty of an offence. The transporter and owner of the waste have a duty to ensure that the waste is disposed of in an appropriate manner. EIS accepts no liability whatsoever for the unlawful disposal of any waste from any site.

7 LIMITATIONS

The report limitations are outlined below:

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

- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose;
- Copyright in this report is the property of EIS. EIS has used a degree of care, skill and diligence normally exercised by consulting professionals in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this report;
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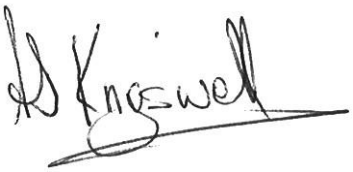
- Any third party who seeks to rely on this report without the express written consent of EIS does so entirely at their own risk and to the fullest extent permitted by law, EIS accepts no liability whatsoever, in respect of any loss or damage suffered by any such third party.

If you have any questions concerning the contents of this letter please do not hesitate to contact us.

Kind Regards

Priya Dass
Senior Environmental Scientist



Adrian Kingswell
Principal

Appendices:

Appendix A: Report Figures
Appendix B: Laboratory Summary Tables
Appendix C: Test pit and Borehole Logs
Appendix D: Laboratory Report/s & COC Documents

Appendix A: Report Figures

AERIAL IMAGE SOURCE: GOOGLE EARTH PRO 7.1.5.1557
AERIAL IMAGE ©: 2015 GOOGLE INC.

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

Title: **SITE LOCATION PLAN**

Location: SOIL BERM, BUILDING W6A & 6B
MACQUARIE UNIVERSITY, MACQUARIE PARK, NSW

Report No: E29807KR2

Figure No: 1

ENVIRONMENTAL INVESTIGATION SERVICES

EIS

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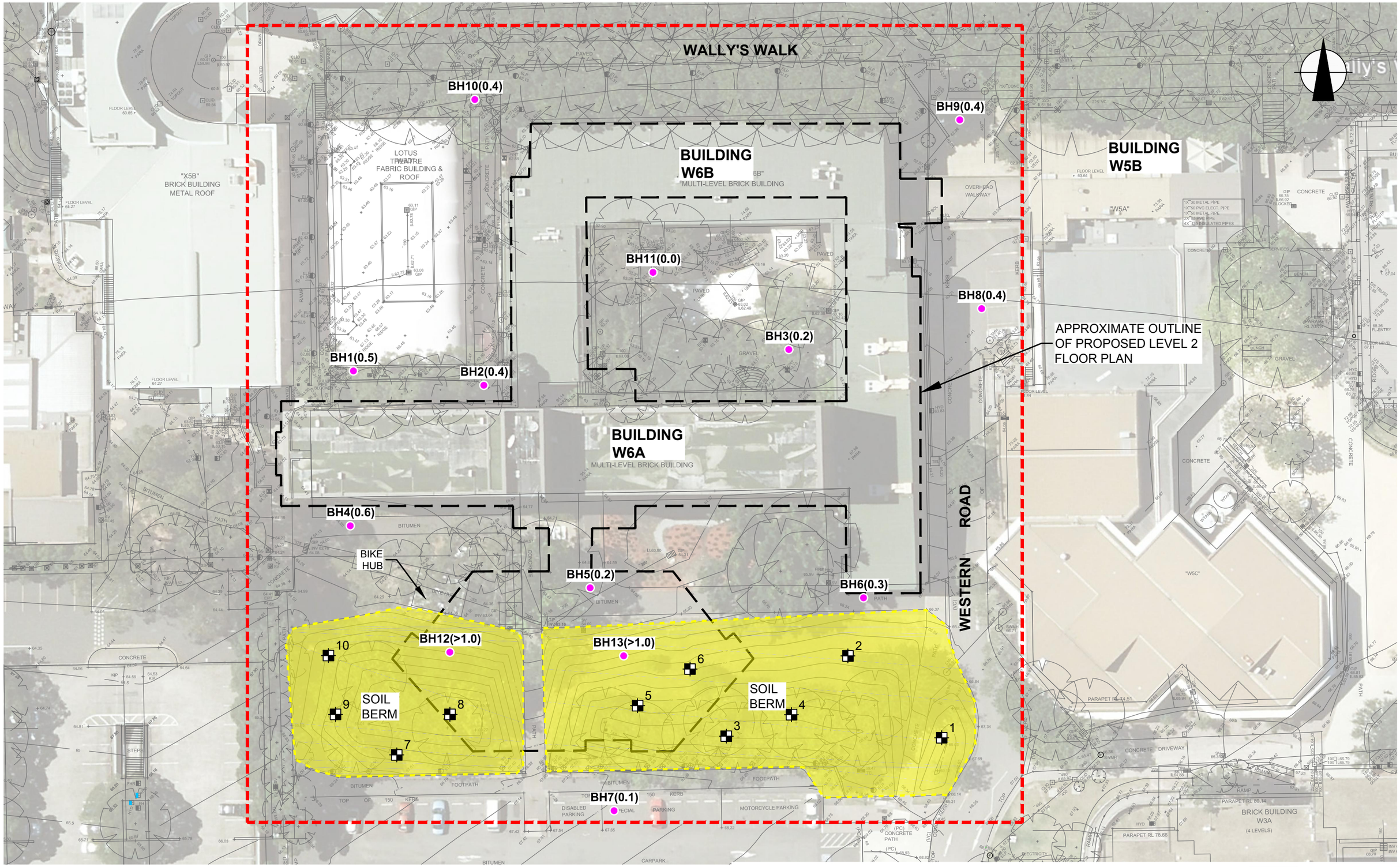

LEGEND

- APPROXIMATE SITE BOUNDARY
- BH (Fill Depth) — BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m), (SEPTEMBER-OCTOBER 2016)
- TESTPIT LOCATION, (APRIL 2017)

0 5 10 15 20 25

SCALE 1:500 @A3 METRES

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

Title: **SAMPLE LOCATION PLAN**

Location: SOIL BERM, BUILDING W6A & 6B
MACQUARIE UNIVERSITY, MACQUARIE PARK, NSW

Report No: E29807KR2

Figure No: 2

ENVIRONMENTAL INVESTIGATION SERVICES

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Appendix B: Laboratory Summary Tables

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

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful [2]	Total Scheduled[3]	PCBs	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	250	0.2	0.5	1	3	100
General Solid Waste CT1 [1]			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	<50	<50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1 [1]			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	<50	<50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2 [1]			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	<50	<50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2 [1]			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	<50	<50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
TP1	0.0-0.1	Fill	12	LPQL	37	12	55	0.2	2	86	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP2	0.5-0.6	Fill	12	LPQL	35	2	18	LPQL	1	8	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP3	0.9-1.0	Fill	5	LPQL	22	LPQL	15	LPQL	LPQL	3	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP4	1.0-1.1	Fill	7	LPQL	28	LPQL	14	LPQL	1	9	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP4	1.9-2.0	Fill	8	LPQL	28	LPQL	20	LPQL	1	10	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP5	0.2-0.3	Fill	11	LPQL	45	8	33	0.2	2	59	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP5	1.1-1.2	Fill	6	LPQL	23	1	16	LPQL	3	11	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP5	1.8-1.9	Fill	8	LPQL	24	2	15	LPQL	LPQL	8	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP6	0.4-0.5	Fill	11	LPQL	13	1	14	LPQL	LPQL	2	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP7	0.9-1.0	Fill	9	LPQL	26	LPQL	20	LPQL	1	14	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP8	0.1-0.2	Fill	8	LPQL	26	2	22	LPQL	LPQL	22	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP8	1.7-1.8	Fill	7	LPQL	12	LPQL	13	LPQL	LPQL	3	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP9	0.6-0.7	Fill	8	LPQL	17	1	17	LPQL	LPQL	17	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP9	1.6-1.7	Fill	6	LPQL	12	LPQL	16	LPQL	LPQL	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
TP10	0.8-0.9	Fill	12	LPQL	22	LPQL	17	LPQL	LPQL	2	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH12	0.0-0.2	Fill	11	LPQL	38	11	34	0.1	2	69	0.4	0.07	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH12	0.9-1.0	Fill	9	LPQL	37	16	40	0.2	3	92	0.11	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH13	0.5-0.6	Fill	8	LPQL	29	9	28	LPQL	3	52	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
Total Number of samples			18	18	18	18	18	18	18	18	18	18	17	17	17	17	17	18	18	18	18	18	18	18	18	18	17
Maximum Value			12	LPQL	45	16	55	0.2	3	92	0.4	0.07	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected

Explanation:

[1] - NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014)

[2] - Assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion

[3] - Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde

Concentration above the CT1 — VALUE
Concentration above SCC1 — VALUE
Concentration above the SCC2 — VALUE

Abbreviations:

PAHs: Polycyclic Aromatic Hydrocarbons
B(a)P: Benzo(a)pyrene
PQL: Practical Quantitation Limit
LPQL: Less than PQL
PID: Photoionisation Detector
PCBs: Polychlorinated Biphenyls
UCL: Upper Level Confidence Limit on Mean Value
NA: Not Analysed
NC: Not Calculated
NSL: No Set Limit
SAC: Site Assessment Criteria
TRH: Total Recoverable Hydrocarbons
CT: Contaminant Threshold
SCC: Specific Contaminant Concentration
HILs: Health Investigation Levels
NEPM: National Environmental Protection Measure
BTEX: Monocyclic Aromatic Hydrocarbons

Appendix C: Test pit and Borehole Logs

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP1
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.1	0			FILL: Silty clay, low plasticity, brown, with concrete and brick fragments.	MC<PL			GRASS COVER
	■		■		PID = 0.0	0.5			FILL: Gravelly sandy clay, low plasticity, light orange brown mottled grey, medium grained sandstone gravel.	MC<PL			
	■		■		PID = 0.0	1			FILL: Gravelly clay, low plasticity, dark orange brown and red brown, fine grained sandstone gravel.	MC<PL			
									END OF TEST PIT AT 1.1m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP2
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.1	0			FILL: Gravelly silty clay, low plasticity, brown, medium grained sandstone gravel, trace of terracotta and glass fragments.	MC<PL			GRASS COVER
	■		■		PID = 0.0	0.5			FILL: Silty clay, low to medium plasticity, orange brown.				
	■		■		PID = 0.0	1			as above, but orange brown mottled grey.				
									END OF TEST PIT AT 1.0m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP3
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.0	0			FILL: Gravelly silty clay, low plasticity, brown, fine to medium grained igneous and sandstone gravel.	MC<PL			GRASS COVER
	■		■		PID = 0.1	0.5			FILL: Gravelly sandy clay, low plasticity, orange brown mottled grey, medium grained sandstone gravel.				
	■		■		PID = 0.0	1			FILL: Gravelly silty clay, low plasticity, dark orange brown mottled red grey.				
									END OF TEST PIT AT 1.0m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP4
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.1	0			FILL: Gravelly silty clay, low plasticity, brown, fine to medium grained igneous gravel.	MC<PL			GRASS COVER
	■		■		PID = 0.1	0.5			FILL: Gravelly sandy clay, low plasticity, orange brown mottled grey, fine to medium grained sandstone gravel.				
	■		■		PID = 0.1	1			FILL: Gravelly silty clay, low plasticity, dark orange brown mottled brown, medium grained sandstone gravel.				
	■		■		PID = 0.0	1.5							
						2			END OF TEST PIT AT 2.0m				
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP5
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLET-ION	■		■		PID = 0.0	0			FILL: Gravelly silty clay, low plasticity, brown, fine to medium grained igneous and sandstone gravel.	MC<PL			GRASS COVER
	■		■		PID = 0.0	0.5			FILL: Gravelly sandy clay, low plasticity, orange red brown mottled grey, fine to medium grained igneous and sandstone gravel.				
	■		■		PID = 0.0	1			FILL: Gravelly silty clay, low plasticity, dark orange mottled brown, medium grained sandstone gravel.				
	■		■		PID = 0.0	1.5							
						2			END OF TEST PIT AT 2.0m				
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP6
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.1	0			FILL: Silty clay, low plasticity, brown, with glass fragments.	MC<PL			GRASS COVER
	■		■		PID = 0.2	0.5			FILL: Gravelly sandy clay, low plasticity, orange brown mottled grey, medium grained sandstone gravel.				
	■		■		PID = 0.1				FILL: Silty clay, low plasticity, orange brown.				
	■		■		PID = 0.0	1			FILL: Gravelly clay, low plasticity, orange brown mottled grey, fine to coarse grained sandstone gravel.				
									END OF TEST PIT AT 1.1m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP7
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.2	0			FILL: Silty clay, low plasticity, dark brown.	MC<PL			GRASS COVER
									FILL: Gravelly silty clay, low plasticity, orange brown mottled grey, fine to medium grained sandstone gravel.	MC<PL			
	■		■		PID = 0.2	0.5							
									as above, but dark orange brown and yellow brown, and fine grained igneous gravel.				
	■		■		PID = 0.1	1			END OF TEST PIT AT 1.0m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP8
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.1	0			FILL: Silty clay, low plasticity, brown.	MC<PL			GRASS COVER
	■		■		PID = 0.1	0.5			FILL: Silty clay, low plasticity, dark orange grey.				
	■		■		PID = 0.0	1			FILL: Gravelly sandy clay, low plasticity, light orange brown mottled grey, fine to medium grained sandstone gravel, trace of concrete fragments.				
	■		■		PID = 0.0	1.5							
						2			END OF TEST PIT AT 2.0m				
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP9
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLET-ION	■		■		PID = 0.1	0			FILL: Gravelly silty clay, low plasticity, orange brown mottled grey, fine to coarse grained sandstone gravel.	MC<PL			GRASS COVER
	■		■		PID = 0.1	0.5							
	■		■		PID = 0.0	1							
	■		■		PID = 0.0	1.5			FILL: Gravelly sandy clay, low plasticity, orange red brown mottled grey, medium to coarse grained sandstone gravel, trace of concrete fragments.				
						2			END OF TEST PIT AT 2.0m				
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Test Pit No.
TP10
1/1

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT

Project: PROPOSED REFURBISHMENT OF BUILDINGS

Location: MACQUARIE UNIVERSITY, BUILDING W6A&W6B, WESTERN RD,MACQUARIE PARK,NSW

Job No. E29807KR2 **Method:** EXCAVATOR **R.L. Surface:** N/A

Date: 20/4/17 **Datum:**

Logged/Checked by: P.D./G.F.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID = 0.0	0			FILL: Silty clay, low plasticity, dark brown.	MC<PL			GRASS COVER
	■		■		PID = 0.1	0.5			FILL: Gravelly silty clay, low plasticity, red orange brown mottled grey, medium grained sandstone gravel.				
	■		■		PID = 0.0	1							
									END OF TEST PIT AT 1.1m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Borehole No. **12** **1/1**

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT PTY LTD

Project: PROPOSED NEW BUILDING & REFURBISHMENT OF BUILDINGS W6A & W6B

Location: MACQUARIE UNIVERSITY, NORTH RYDE, NSW

Job No. E29807KR **Method:** HAND AUGER **R.L. Surface:** ≈ 66.5m

Date: 6/10/16 **Datum:** AHD

Logged/Checked by: P.D./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■		■		PID=0.1	0			FILL: Gravelly silty clay, low plasticity, light brown, fine grained sandstone gravel, orange brown.	D			NO ODOUR/ STAINING NO ACM
	■		■		PID=0.0	0.5							
	■		■		PID=0.0	1			END OF BOREHOLE AT 1.0m				
						1.5							
						2							
						2.5							
						3							
						3.5							

ENVIRONMENTAL INVESTIGATION SERVICES

CONSULTING ENVIRONMENTAL ENGINEERS

ENVIRONMENTAL LOG

Borehole No. **13** **1/1**

Environmental logs are not to be used for geotechnical purposes

Client: CAPITAL INSIGHT PTY LTD

Project: PROPOSED NEW BUILDING & REFURBISHMENT OF BUILDINGS W6A & W6B

Location: MACQUARIE UNIVERSITY, NORTH RYDE, NSW

Job No. E29807KR **Method:** HAND AUGER **R.L. Surface:** ≈ 66.5m

Date: 6/10/16 **Datum:** AHD

Logged/Checked by: P.D./A.K.

Groundwater Record	SAMPLES ES	SAMPLES ASS	SAMPLES ASB	SAMPLES SAL	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■				PID=0.1	0			FILL: Silty clay, low plasticity, light brown, plastic fragments.	D			GRASS COVER NO ODOUR/ STAINING NO ACM
	■				PID=0.1	0.5			as above, but no plastic fragments				
	■				PID=0.0	1			END OF BOREHOLE AT 1.0m				
						1.5							
						2							
						2.5							
						3							
						3.5							

EXPLANATORY NOTES – ENVIRONMENTAL LOGS

INTRODUCTION

These notes have been provided to supplement the environmental report with regards to drilling and field logging. Not all notes are necessarily relevant to all reports. Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and manmade processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies involve gathering and assimilating limited facts about these characteristics and properties in order to understand the ground on a particular site under certain conditions. These conditions are directly relevant only to the ground at the place where, and time when, the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

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

Soil types are described according to the predominating particle size and behaviour as set out in the attached Unified Soil Classification Table qualified by the grading of other particles present (e.g. sandy clay) as set out below (note that unless stated in the report, the soil classification is based on a qualitative field assessment, not laboratory testing):

Soil Classification	Particle Size
Clay	less than 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2mm
Gravel	2 to 60mm

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

Relative Density	SPT 'N' Value (blows/300mm)
Very loose	less than 4
Loose	4 – 10
Medium dense	10 – 30
Dense	30 – 50
Very Dense	greater than 50

Cohesive soils are classified on the basis of strength (consistency) either by use of hand penetrometer, laboratory testing or engineering examination. The strength terms are defined as shown in the following table:

Classification	Unconfined Compressive Strength kPa
Very Soft	less than 25
Soft	25 – 50
Firm	50 – 100
Stiff	100 – 200
Very Stiff	200 – 400
Hard	Greater than 400
Friable	Strength not attainable – soil crumbles

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'Shale' is used to describe thinly bedded to laminated siltstone.

DRILLING OR EXCAVATION METHODS

The following is a brief summary of drilling and excavation methods currently adopted by the Company, and some comments on their use and application. All except test pits and hand auger drilling require the use of a mechanical drilling rig.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the in-situ soils if it is safe to descend into the pit. The depth of penetration is limited to approximately 3m for a backhoe and up to 6m for an excavator. Limitations of test pits include problems associated with disturbance and difficulty of reinstatement; and the consequent effects on nearby structures. Care must be taken if construction is to be carried out near test pit locations to either properly re-compact the backfill during construction, or to design and construct the structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Premature refusal of the hand augers can occur on a variety of materials such as fill, hard clay, gravel or ironstone, and does not necessarily indicate rock level.

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

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

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

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

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, an NMLC triple tube core barrel, which gives a core of about 50mm diameter, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as CORE LOSS. The locations of losses are determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the top end of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, "Methods of Testing Soils for Engineering Purposes" – Test F3.1.

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

The test results are reported in the following form:

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

The results of the test can be related empirically to the engineering properties of the soil. Occasionally, the drop hammer is used to drive 50mm diameter thin walled sample tubes (U50) in clays. In such circumstances, the test results are shown on the borehole logs in brackets.

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

LOGS

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

The attached explanatory notes define the terms and symbols used in preparation of the logs.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than "straight line"

variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

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

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

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

FILL

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

The presence of fill materials is usually regarded with caution as the possible variation in density, strength and material type is much greater than with natural soil deposits. If the volume and quality of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classifications and rocks strengths indicated on the environmental logs unless noted in the 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, EIS should be notified immediately.

GRAPHIC LOG SYMBOLS FOR SOIL AND ROCKS

SOIL


FILL


TOPSOIL


CLAY (CL, CH)


SILT (ML, MH)


SAND (SP, SW)


GRAVEL (GP, GW)


SANDY CLAY (CL, CH)


SILTY CLAY (CL, CH)


CLAYEY SAND (SC)


SILTY SAND (SM)


GRAVELLY CLAY (CL, CH)


CLAYEY GRAVEL (GC)


SANDY SILT (ML)


PEAT AND ORGANIC SOILS

ROCK


CONGLOMERATE


SANDSTONE


SHALE


SILTSTONE, MUDSTONE, CLAYSTONE


LIMESTONE


PHYLLITE, SCHIST


TUFF


GRANITE, GABBRO


DOLERITE, DIORITE


BASALT, ANDESITE


QUARTZITE

DEFECTS AND INCLUSIONS


CLAY SEAM


SHEARED OR CRUSHED SEAM


BRECCIATED OR SHATTERED SEAM/ZONE


IRONSTONE GRAVEL


ORGANIC MATERIAL

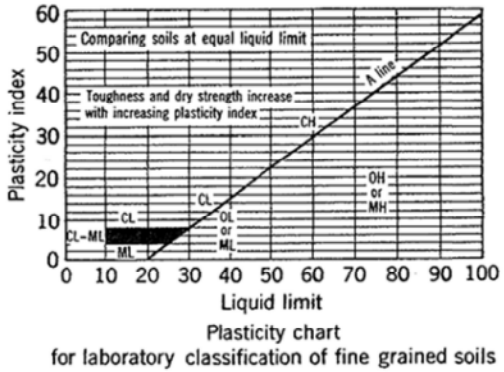
OTHER MATERIALS


CONCRETE


BITUMINOUS CONCRETE, COAL


COLLUVIUM

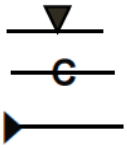
Field Identification Procedures (Excluding particles larger than 75 μm and basing fractions on estimated weights)						Group Symbols [a]	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria
Coarse-grained soils More than half of material is *larger* than 75 μm sieve size[b] (The 75 μm sieve size is about the smallest particle visible to naked eye)	Gravels More than half of coarse fraction is larger than 4 mm sieve size	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes			*GW*	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: *Silty sand*, gravelly; about 20% hard, angular gravel particles 12 mm maximum size; rounded and subangular sand grains coarse to fine, about 15% non-plastic fines with low dry strength; well compacted and moist in place; alluvial sand; (*SM*)	Use grain size curve in identifying the fractions as given under field identification Determine percentages of gravel and sand from grain size curve Depending on percentage of fines (fraction smaller than 75 μm sieve size) coarse grained soils are classified as follows: Less than 5% *GW, GP, SW, SP* More than 12% *GM, GC, SM, SC* 5% to 12% *Borderline* cases requiring use of dual symbols $C_U = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for *GW* Atterberg limits below "A" line, or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits above "A" line, with *PI* greater than 7
			Predominantly one size or a range of sizes with some intermediate sizes missing			*GP*	Poorly graded gravels, gravel-sand mixtures, little or no fines		
		Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)			*GM*	Silty gravels, poorly graded gravel-sand-silt mixtures		
			Plastic fines (for identification procedures, see *CL* below)			*GC*	Clayey gravels, poorly graded gravel-sand-clay mixtures		
	Sands More than half of coarse fraction is smaller than 4 mm sieve size	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes			*SW*	Well graded sands, gravelly sands, little or no fines		$C_U = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for *SW* Atterberg limits below "A" line or *PI* less than 5 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits below "A" line with *PI* greater than 7
			Predominantly one size or a range of sizes with some intermediate sizes missing			*SP*	Poorly graded sands, gravelly sands, little or no fines		
		Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures, see *ML* below)			*SM*	Silty sands, poorly graded sand-silt mixtures		
			Plastic fines (for identification procedures, see *CL* below)			*SC*	Clayey sands, poorly graded sand-clay mixtures		
Fine-grained soils More than half of material is *smaller* than 75 μm sieve size	Identification Procedures on Fraction Smaller than 380 μm Sieve Size		Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)				
	Silts and clays liquid limit less than 50		None to slight	Quick to slow	None	*ML*	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: *Clayey silt*, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (*ML*)	
			Medium to high	None to very slow	Medium	*CL*	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
			Slight to medium	Slow	Slight	*OL*	Organic silts and organic silt-clays of low plasticity		
	Silts and clays liquid limit greater than 50		Slight to medium	Slow to none	Slight to medium	*MH*	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
			High to very high	None	High	*CH*	Inorganic clays of high plasticity, fat clays		
			Medium to high	None to very slow	Slight to medium	*OH*	Organic clays of medium to high plasticity		
Highly Organic Soils			Readily identified by colour, odour, spongy feel and frequently by fibrous texture			*Pt*	Peat and other highly organic soils		



Plasticity chart
for laboratory classification of fine grained soils

Note: 1 Soils possessing characteristics of two groups are designated by combinations of group symbols (eg. GW-GC, well graded gravel-sand mixture with clay fines).
2 Soils with liquid limits of the order of 35 to 50 may be visually classified as being of medium plasticity.

LOG SYMBOLS

LOG COLUMN	SYMBOL	DEFINITION
Groundwater Record		Standing water level. Time delay following completion of drilling may be shown. Extent of borehole collapse shortly after drilling. Groundwater seepage into borehole or excavation noted during drilling or excavation.
Samples	ES U50 DB DS ASB ASS SAL	Soil sample taken over depth indicated, for environmental analysis. Undisturbed 50mm diameter tube sample taken over depth indicated. Bulk disturbed sample taken over depth indicated. Small disturbed bag sample taken over depth indicated. Soil sample taken over depth indicated, for asbestos screening. Soil sample taken over depth indicated, for acid sulfate soil analysis. Soil sample taken over depth indicated, for salinity analysis.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual show blows per 150mm penetration. 'R' as noted below.
	N_c = 5 7 3 R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60 degree solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25 PID = 100	Vane shear reading in kPa of Undrained Shear Strength. Photoionisation detector reading in ppm (Soil sample heads pace test).
Moisture (Cohesive Soils) (Cohesionless)	MC > PL MC ≈ PL MC < PL D M W	Moisture content estimated to be greater than plastic limit. Moisture content estimated to be approximately equal to plastic limit. Moisture content estimated to be less than plastic limit. DRY – Runs freely through fingers. MOIST – Does not run freely but no free water visible on soil surface. WET – Free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS S F St VSt H ( )	VERY SOFT – Unconfined compressive strength less than 25kPa SOFT – Unconfined compressive strength 25-5 0kPa FIRM – Unconfined compressive strength 50-1 00kPa STIFF – Unconfined compressive strength 100- 200kPa VERY STIFF – Unconfined compressive strength 200- 400kPa HARD – Unconfined compressive strength greater than 400kPa Bracketed symbol indicates estimated consistency based o n tactile examination or other tests.
Density Index/ Relative Density (Cohesionless Soils)	VL L MD D VD ( )	**Density Index (ID) Range (%)** / **SPT ' N' Value Range (Blows/300mm)** Very Loose <15 / 0-4 Loose 15-35 / 4-10 Medium Dense 35-65 / 10-30 Dense 65-85 / 30-50 Very Dense >85 / >50 Bracketed symbol indicates estimated density based on ease of drilling or other tests.
Hand Penetrometer Readings	300 250	Numbers indicate individual test results in kPa on representative undisturbed material unless noted otherwise
Remarks	'V' bit 'TC' bit T_{60}	Hardened steel 'V' shaped bit. Tungsten carbide wing bit. Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.

LOG SYMBOLS CONTINUED

ROCK STRENGTH

Rock strength is defined by the Point Load Strength Index (Is 50) and refers to the strength of the rock substance in the bedding. The test procedure is described by the International Journal of Rock Mechanics, Mining and Geomechanics Abstract Volume 22, No 2, 1985.

TERM	SYMBOL	Is (50) MPa	FIELD GUIDE
Extremely Low:	EL	0.03	Easily remoulded by hand to a material with soil properties.
Very Low:	VL	0.1	May be crumbled in the hand. Sandstone is "sugary" and friable.
Low:	L	0.3	A piece of core 150 mm long x 50mm dia. may be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.
Medium Strength:	M	1	A piece of core 150 mm long x 50mm dia. can be broken by hand with difficulty. Readily scored with knife.
High:	H	3	A piece of core 150 mm long x 50mm dia. core cannot be broken by hand, can be slightly scratched or scored with knife; rock rings under hammer.
Very High:	VH	10	A piece of core 150 mm long x 50mm dia. may be broken with hand-held pick after more than one blow. Cannot be scratched with pen knife; rock rings under hammer.
Extremely High:	EH		A piece of core 150 mm long x 50mm dia. is very difficult to break with h and-held hammer . Rings when struck with a hammer.

ROCK STRENGTH

ABBREVIATION	DESCRIPTION	NOTES
Be	Bedding Plane Parting	Defect orientations measured relative to the normal to (i.e. relative to horizontal for vertical holes)
CS	Clay Seam	
J	Joint	
P	Planar	
Un	Undulating	
S	Smooth	
R	Rough	
IS	Iron stained	
XWS	Extremely Weathered Seam	
Cr	Crushed Seam	
60t	Thickness of defect in millimetres	

Appendix D: Laboratory Report/s & COC Documents

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD	EIS Job Number: E29807KR2	ENVIRONMENTAL INVESTIGATION SERVICES
12 ASHLEY STREET		REAR OF 115 WICKS ROAD
CHATSWOOD NSW 2067		MACQUARIE PARK, NSW 2113
P: (02) 99106200	Date Results Required: STANDARD	P: 02-9888 5000 F: 02-9888 5001
F: (02) 99106201		Attention: Priya Dass
Attention: Aileen	Page: 1	

Location:	Soil Berm, Building W6A and W6B, Macquarie University	Sample Preserved in Esky on Ice
Sampler:		Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3a	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos			
20/04/2017	1	TP1	0.0-0.1	G, A	0.1	Fill				✓								
	2	TP1	0.5-0.6		0													
	3	TP1	0.9-1.0		0													
	4	TP2	0.0-0.1		0.1													
	5	TP2	0.5-0.6		0					✓								
	6	TP2	0.9-1.0		0													
	7	TP3	0.0-0.1		0													
	8	TP3	0.4-0.5		0.1													
	9	TP3	0.9-1.0		0					✓								
	10	TP4	0.1-0.2		0.1													
	11	TP4	0.6-0.7		0.1													
	12	TP4	1.0-1.1		0.1					✓								
	13	TP4	1.9-2.0		0					✓								
	14	TP5	0.2-0.3		0					✓								
	15	TP5	0.5-0.6		0													
	16	TP5	1.1-1.2		0					✓								
	17	TP5	1.8-1.9		0					✓								
	18	TP6	0.1-0.2		0.1													
	19	TP6	0.4-0.5		0.2					✓								
	20	TP6	0.6-0.7		0.1													
	21	TP6	1.0-1.1		0													
	22	TP7	0.0-0.1		0.2													
	23	TP7	0.5-0.6		0.2													
	24	TP7	0.9-1.0		0.1					✓								
	25	TP8	0.1-0.2		0.1					✓								
	26	TP8	0.4-0.5		0.1													
	27	TP8	1.0-1.1		0													
	28	TP8	1.7-1.8		0					✓								
	29	TP9	0.2-0.3		0.1													
	30	TP9	0.6-0.7		0.1					✓								
	31	TP9	1.1-1.2		0													
	32	TP9	1.6-1.7		0					✓								
	33	TP10	0.0-0.1		0													
	34	TP10	0.5-0.6		0.1													
	35	TP10	0.8-0.9		0					✓								

ENVIROLAB GROUP

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

Job No: 165655

Date Received: 21/4
Time Received: 15:30
Received by: TT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Remarks (comments/detection limits required):	Sample Containers: G - 250mg Glass Jar A - Ziplock Asbestos Bag P - Plastic Bag			
Relinquished By: Priya Dass	Date: 21/04/17	Time: 15:30	Received By: Tim-ELS	Date: 21/04

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Environmental Investigation Services
Attention	P Dass

Sample Login Details	
Your Reference	E29807KR2, Macquarie University
Envirolab Reference	**165655**
Date Sample Received	21/04/2017
Date Instructions Received	21/04/2017
Date Results Expected to be Reported	**01/05/2017**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	35 soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	11.4
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples

Please direct any queries to:

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

Sample and Testing Details on following page

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

Sample Id	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*Organophosphorus Pesticides*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Asbestos ID - soils*	*On Hold*
TP1-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓	
TP1-0.5-0.6									✓
TP1-0.9-1.0									✓
TP2-0.0-0.1									✓
TP2-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓	
TP2-0.9-1.0									✓
TP3-0.0-0.1									✓
TP3-0.4-0.5									✓
TP3-0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	
TP4-0.1-0.2									✓
TP4-0.6-0.7									✓
TP4-1.0-1.1	✓	✓	✓	✓	✓	✓	✓	✓	
TP4-1.9-2.0	✓	✓	✓	✓	✓	✓	✓	✓	
TP5-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	
TP5-0.5-0.6									✓
TP5-1.1-1.2	✓	✓	✓	✓	✓	✓	✓	✓	
TP5-1.8-1.9	✓	✓	✓	✓	✓	✓	✓	✓	
TP6-0.1-0.2									✓
TP6-0.4-0.5	✓	✓	✓	✓	✓	✓	✓	✓	
TP6-0.6-0.7									✓
TP6-1.0-1.1									✓
TP7-0.0-0.1									✓
TP7-0.5-0.6									✓
TP7-0.9-1.0	✓	✓	✓	✓	✓	✓	✓	✓	
TP8-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓	
TP8-0.4-0.5									✓
TP8-1.0-1.1									✓
TP8-1.7-1.8	✓	✓	✓	✓	✓	✓	✓	✓	
TP9-0.2-0.3									✓
TP9-0.6-0.7	✓	✓	✓	✓	✓	✓	✓	✓	
TP9-1.1-1.2									✓
TP9-1.6-1.7	✓	✓	✓	✓	✓	✓	✓	✓	
TP10-0.0-0.1									✓
TP10-0.5-0.6									✓
TP10-0.8-0.9	✓	✓	✓	✓	✓	✓	✓	✓	

The '✓' indicates the testing you have requested. ***THIS IS NOT A REPORT OF THE RESULTS****.*

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 165655

Client:

Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention: P Dass

Sample log in details:

Your Reference:	**E29807KR2, Macquarie University**
No. of samples:	35 soils
Date samples received / completed instructions received	21/04/17 / 21/04/17

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: / Issue Date:	1/05/17 / 28/04/17
Date of Preliminary Report:	Not Issued

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:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP4
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	105	98	96	104	105

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	---------- -	TP5	TP5	TP5	TP6	TP7
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	98	103	100	101	102

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	----------	TP8	TP8	TP9	TP9	TP10
Depth	- ----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
TRHC$_6$ - C$_9$	mg/kg	<25	<25	<25	<25	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25	<25	<25	<25	<25
vTPHC$_6$ - 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
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	95	105	98	99

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP4
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	25/04/2017	25/04/2017	25/04/2017	25/04/2017	25/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<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	%	111	101	96	82	98

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	---------- -	TP5	TP5	TP5	TP6	TP7
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	25/04/2017	25/04/2017	25/04/2017	25/04/2017	25/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<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	%	98	98	98	97	98

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	----------	TP8	TP8	TP9	TP9	TP10
Depth	- ----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	25/04/2017	25/04/2017	25/04/2017	25/04/2017	25/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<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	%	96	96	95	97	97

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	165655-1 TP1 0.0-0.1 20/04/2017 Soil	165655-5 TP2 0.5-0.6 20/04/2017 Soil	165655-9 TP3 0.9-1.0 20/04/2017 Soil	165655-12 TP4 1.0-1.1 20/04/2017 Soil	165655-13 TP4 1.9-2.0 20/04/2017 Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	112	123	115	106	114

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	165655-14 TP5 0.2-0.3 20/04/2017 Soil	165655-16 TP5 1.1-1.2 20/04/2017 Soil	165655-17 TP5 1.8-1.9 20/04/2017 Soil	165655-19 TP6 0.4-0.5 20/04/2017 Soil	165655-24 TP7 0.9-1.0 20/04/2017 Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	119	114	110	113	114

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	165655-25 TP8 0.1-0.2 20/04/2017 Soil	165655-28 TP8 1.7-1.8 20/04/2017 Soil	165655-30 TP9 0.6-0.7 20/04/2017 Soil	165655-32 TP9 1.6-1.7 20/04/2017 Soil	165655-35 TP10 0.8-0.9 20/04/2017 Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	113	110	115	112	115

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	----------	TP1	TP2	TP3	TP4	TP4
Depth	- ----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
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	%	106	108	103	91	109

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	----------	TP5	TP5	TP5	TP6	TP7
Depth	- ----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	104	106	111	106	107

Organochlorine Pesticides in soil						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	----------	TP8	TP8	TP9	TP9	TP10
	-					
Depth	----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
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	%	105	105	105	104	107

Organophosphorus Pesticides						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP4
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Ethion	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
Parathion	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
Surrogate TCMX	%	106	108	103	91	109

Organophosphorus Pesticides						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	---------- -	TP5	TP5	TP5	TP6	TP7
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Ethion	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
Parathion	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
Surrogate TCMX	%	104	106	111	106	107

Organophosphorus Pesticides Our Reference: Your Reference	UNITS ----------	165655-25 TP8	165655-28 TP8	165655-30 TP9	165655-32 TP9	165655-35 TP10
Depth	- ----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Ethion	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
Parathion	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
Surrogate TCMX	%	105	105	105	104	107

PCBs in Soil						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	----------	TP1	TP2	TP3	TP4	TP4
	-					
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
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 TCLMX	%	106	108	103	91	109

PCBs in Soil						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	----------	TP5	TP5	TP5	TP6	TP7
	-					
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
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 TCLMX	%	104	106	111	106	107

PCBs in Soil						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	----------	TP8	TP8	TP9	TP9	TP10
	-					
Depth	----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
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 TCLMX	%	105	105	105	104	107

Acid Extractable metals in soil						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	----------	TP1	TP2	TP3	TP4	TP4
	-					
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Arsenic	mg/kg	12	12	5	7	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	37	35	22	28	28
Copper	mg/kg	12	2	<1	<1	<1
Lead	mg/kg	55	18	15	14	20
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	1	<1	1	1
Zinc	mg/kg	86	8	3	9	10

Acid Extractable metals in soil						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	----------	TP5	TP5	TP5	TP6	TP7
	-					
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Arsenic	mg/kg	11	6	8	11	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	45	23	24	13	26
Copper	mg/kg	8	1	2	1	<1
Lead	mg/kg	33	16	15	14	20
Mercury	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	3	<1	<1	1
Zinc	mg/kg	59	11	8	2	14

Acid Extractable metals in soil						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	----------	TP8	TP8	TP9	TP9	TP10
	-					
Depth	----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Arsenic	mg/kg	8	7	8	6	12
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	26	12	17	12	22
Copper	mg/kg	2	<1	1	<1	<1
Lead	mg/kg	22	13	17	16	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	<1	<1	<1	<1
Zinc	mg/kg	22	3	17	25	2

Moisture						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP4
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Moisture	%	11	23	19	22	19

Moisture						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	---------- -	TP5	TP5	TP5	TP6	TP7
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Moisture	%	16	18	18	15	22

Moisture						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	---------- -	TP8	TP8	TP9	TP9	TP10
Depth	----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	24/04/2017	24/04/2017	24/04/2017	24/04/2017	24/04/2017
Date analysed	-	26/04/2017	26/04/2017	26/04/2017	26/04/2017	26/04/2017
Moisture	%	15	13	17	17	19

Asbestos ID - soils						
Our Reference:	UNITS	165655-1	165655-5	165655-9	165655-12	165655-13
Your Reference	---------- -	TP1	TP2	TP3	TP4	TP4
Depth	----------	0.0-0.1	0.5-0.6	0.9-1.0	1.0-1.1	1.9-2.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Sample mass tested	g	Approx. 30g	Approx. 25g	Approx. 25g	Approx. 30g	Approx. 35g
Sample Description	-	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	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

Asbestos ID - soils						
Our Reference:	UNITS	165655-14	165655-16	165655-17	165655-19	165655-24
Your Reference	---------- -	TP5	TP5	TP5	TP6	TP7
Depth	----------	0.2-0.3	1.1-1.2	1.8-1.9	0.4-0.5	0.9-1.0
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Sample mass tested	g	Approx. 45g	Approx. 45g	Approx. 25g	Approx. 30g	Approx. 30g
Sample Description	-	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	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

Asbestos ID - soils						
Our Reference:	UNITS	165655-25	165655-28	165655-30	165655-32	165655-35
Your Reference	---------- -	TP8	TP8	TP9	TP9	TP10
Depth	----------	0.1-0.2	1.7-1.8	0.6-0.7	1.6-1.7	0.8-0.9
Date Sampled		20/04/2017	20/04/2017	20/04/2017	20/04/2017	20/04/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/04/2017	28/04/2017	28/04/2017	28/04/2017	28/04/2017
Sample mass tested	g	Approx. 30g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 40g
Sample Description	-	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks	Red clayey soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	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

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	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-003	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
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.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
TRHC$_{6}$ - C$_{9}$	mg/kg	25	Org-016	<25	165655-1	<25 || <25	LCS-6	100%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	Org-016	<25	165655-1	<25 || <25	LCS-6	100%
Benzene	mg/kg	0.2	Org-016	<0.2	165655-1	<0.2 || <0.2	LCS-6	112%
Toluene	mg/kg	0.5	Org-016	<0.5	165655-1	<0.5 || <0.5	LCS-6	100%
Ethylbenzene	mg/kg	1	Org-016	<1	165655-1	<1 || <1	LCS-6	94%
m+p-xylene	mg/kg	2	Org-016	<2	165655-1	<2 || <2	LCS-6	96%
o-Xylene	mg/kg	1	Org-016	<1	165655-1	<1 || <1	LCS-6	92%
naphthalene	mg/kg	1	Org-014	<1	165655-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	111	165655-1	105 || 104 || RPD: 1	LCS-6	109%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			25/04/2017	165655-1	25/04/2017 || 25/04/2017	LCS-6	25/04/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	165655-1	<50 || <50	LCS-6	104%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	165655-1	<100 || <100	LCS-6	101%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	165655-1	<100 || <100	LCS-6	91%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	165655-1	<50 || <50	LCS-6	104%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	165655-1	<100 || <100	LCS-6	101%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	165655-1	<100 || <100	LCS-6	91%
Surrogate o-Terphenyl	%		Org-003	85	165655-1	111 || 98 || RPD: 12	LCS-6	98%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			26/04/2017	165655-1	26/04/2017 || 26/04/2017	LCS-6	26/04/2017
Naphthalene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	LCS-6	96%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	LCS-6	92%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	LCS-6	98%
Anthracene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	LCS-6	93%
Pyrene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	LCS-6	91%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	LCS-6	87%
Benzo(b,j+k) fluoranthene	mg/kg	0.2	Org-012	<0.2	165655-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	165655-1	<0.05 || <0.05	LCS-6	84%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	99	165655-1	112 || 126 || RPD: 12	LCS-6	139%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
HCB	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	99%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	96%
Heptachlor	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	98%
delta-BHC	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	89%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	98%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	112%
Dieldrin	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	105%
Endrin	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	100%
pp-DDD	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	113%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	LCS-6	78%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	92	165655-1	106 || 104 || RPD: 2	LCS-6	119%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	90%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	83%
Dimethoate	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	102%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	80%
Malathion	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	84%
Parathion	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	99%
Ronnel	mg/kg	0.1	Org-008	<0.1	165655-1	<0.1 || <0.1	LCS-6	82%
Surrogate TCMX	%		Org-008	92	165655-1	106 || 104 || RPD: 2	LCS-6	90%
QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	LCS-6	102%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	165655-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	92	165655-1	106 || 104 || RPD: 2	LCS-6	90%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			24/04/2017	165655-1	24/04/2017 || 24/04/2017	LCS-6	24/04/2017
Date analysed	-			26/04/2017	165655-1	26/04/2017 || 26/04/2017	LCS-6	26/04/2017
Arsenic	mg/kg	4	Metals-020	<4	165655-1	12 || 12 || RPD: 0	LCS-6	105%
Cadmium	mg/kg	0.4	Metals-020	<0.4	165655-1	<0.4 || <0.4	LCS-6	98%
Chromium	mg/kg	1	Metals-020	<1	165655-1	37 || 36 || RPD: 3	LCS-6	102%
Copper	mg/kg	1	Metals-020	<1	165655-1	12 || 13 || RPD: 8	LCS-6	105%
Lead	mg/kg	1	Metals-020	<1	165655-1	55 || 61 || RPD: 10	LCS-6	99%
Mercury	mg/kg	0.1	Metals-021	<0.1	165655-1	0.2 || 0.2 || RPD: 0	LCS-6	109%
Nickel	mg/kg	1	Metals-020	<1	165655-1	2 || 2 || RPD: 0	LCS-6	93%
Zinc	mg/kg	1	Metals-020	<1	165655-1	86 || 110 || RPD: 24	LCS-6	95%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
$TRHC_6$ - C_9	mg/kg	165655-28	<25 || <25	165655-5	95%
$TRHC_6$ - C_{10}	mg/kg	165655-28	<25 || <25	165655-5	95%
Benzene	mg/kg	165655-28	<0.2 || <0.2	165655-5	106%
Toluene	mg/kg	165655-28	<0.5 || <0.5	165655-5	94%
Ethylbenzene	mg/kg	165655-28	<1 || <1	165655-5	91%
m+p-xylene	mg/kg	165655-28	<2 || <2	165655-5	93%
o-Xylene	mg/kg	165655-28	<1 || <1	165655-5	89%
naphthalene	mg/kg	165655-28	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	165655-28	95 || 109 || RPD: 14	165655-5	94%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	25/04/2017 || 25/04/2017	165655-5	25/04/2017
$TRHC_{10}$ - C_{14}	mg/kg	165655-28	<50 || <50	165655-5	98%
$TRHC_{15}$ - C_{28}	mg/kg	165655-28	<100 || <100	165655-5	93%
$TRHC_{29}$ - C_{36}	mg/kg	165655-28	<100 || <100	165655-5	109%
$TRH>C_{10}$-C_{16}	mg/kg	165655-28	<50 || <50	165655-5	98%
$TRH>C_{16}$-C_{34}	mg/kg	165655-28	<100 || <100	165655-5	93%
$TRH>C_{34}$-C_{40}	mg/kg	165655-28	<100 || <100	165655-5	109%
Surrogate o-Terphenyl	%	165655-28	96 || 97 || RPD: 1	165655-5	101%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	26/04/2017 || 26/04/2017	165655-5	26/04/2017
Naphthalene	mg/kg	165655-28	<0.1 || <0.1	165655-5	101%
Acenaphthylene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	165655-28	<0.1 || <0.1	165655-5	95%
Phenanthrene	mg/kg	165655-28	<0.1 || <0.1	165655-5	93%
Anthracene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	165655-28	<0.1 || <0.1	165655-5	90%
Pyrene	mg/kg	165655-28	<0.1 || <0.1	165655-5	92%
Benzo(a)anthracene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	165655-28	<0.1 || <0.1	165655-5	86%
Benzo(b,j+k)fluoranthene	mg/kg	165655-28	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	165655-28	<0.05 || <0.05	165655-5	90%
Indeno(1,2,3-c,d)pyrene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	165655-28	110 || 112 || RPD: 2	165655-5	106%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
HCB	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	165655-28	<0.1 || <0.1	165655-5	92%
gamma-BHC	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	165655-28	<0.1 || <0.1	165655-5	86%
Heptachlor	mg/kg	165655-28	<0.1 || <0.1	165655-5	86%
delta-BHC	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	165655-28	<0.1 || <0.1	165655-5	81%
Heptachlor Epoxide	mg/kg	165655-28	<0.1 || <0.1	165655-5	88%
gamma-Chlordane	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	165655-28	<0.1 || <0.1	165655-5	102%
Dieldrin	mg/kg	165655-28	<0.1 || <0.1	165655-5	95%
Endrin	mg/kg	165655-28	<0.1 || <0.1	165655-5	88%
pp-DDD	mg/kg	165655-28	<0.1 || <0.1	165655-5	103%
Endosulfan II	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	165655-28	<0.1 || <0.1	165655-5	73%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	165655-28	105 || 104 || RPD: 1	165655-5	118%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Azinphos-methyl (Guthion)	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	165655-28	<0.1 || <0.1	165655-5	89%
Chlorpyriphos-methyl	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	165655-28	<0.1 || <0.1	165655-5	70%
Dimethoate	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	165655-28	<0.1 || <0.1	165655-5	119%
Fenitrothion	mg/kg	165655-28	<0.1 || <0.1	165655-5	76%
Malathion	mg/kg	165655-28	<0.1 || <0.1	165655-5	80%
Parathion	mg/kg	165655-28	<0.1 || <0.1	165655-5	94%
Ronnel	mg/kg	165655-28	<0.1 || <0.1	165655-5	80%
Surrogate TCMX	%	165655-28	105 || 104 || RPD: 1	165655-5	109%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Aroclor 1016	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	165655-28	<0.1 || <0.1	165655-5	103%
Aroclor 1260	mg/kg	165655-28	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	165655-28	105 || 104 || RPD: 1	165655-5	109%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	165655-28	24/04/2017 || 24/04/2017	165655-5	24/04/2017
Date analysed	-	165655-28	26/04/2017 || 26/04/2017	165655-5	26/04/2017
Arsenic	mg/kg	165655-28	7 || 12 || RPD: 53	165655-5	77%
Cadmium	mg/kg	165655-28	<0.4 || <0.4	165655-5	85%
Chromium	mg/kg	165655-28	12 || 13 || RPD: 8	165655-5	89%
Copper	mg/kg	165655-28	<1 || <1	165655-5	100%
Lead	mg/kg	165655-28	13 || 15 || RPD: 14	165655-5	78%
Mercury	mg/kg	165655-28	<0.1 || <0.1	165655-5	106%
Nickel	mg/kg	165655-28	<1 || <1	165655-5	82%
Zinc	mg/kg	165655-28	3 || 2 || RPD: 40	165655-5	84%

Report Comments:

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.

Note: All samples were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier:	Lucy Zhu
Asbestos ID was authorised by Approved Signatory:	Paul Ching

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NR: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was 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.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD	EIS Job Number: E29807KR	ENVIRONMENTAL INVESTIGATION SERVICES
12 ASHLEY STREET		REAR OF 115 WICKS ROAD
CHATSWOOD NSW 2067	Date Results Required: STANDARD	MACQUARIE PARK, NSW 2113
P: (02) 99106200		P: 02-9888 5000 F: 02-9888 5001
F: (02) 99106201		Attention: Priya Dass
Attention: Aileen	Page: 1	

Location:	Buildings W6A & W6B, Macquarie University, Macquarie Park	Sample Preserved in Esky on Ice
Sampler:		Tests Required

	Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 2	Combo 3	Combo 6	Combo 6a	8 Metals	PAHs	TRH/BTEX	BTEX	Asbestos			
1	28/09/2016		BH1	0.0-0.1	G, A	0.1	Fill				✓								
2	28/09/2016		BH1	0.2-0.3		0.1	Fill												
3	28/09/2016		BH1	0.5-0.6		0	Silty Clay												
4	28/09/2016		BH2	0.0-0.1		0.3	Fill				✓								
5	28/09/2016		BH2	0.4-0.5		0.5	Silty Clay		✓										
6	28/09/2016		BH3	0.1-0.2		0.2	Fill				✓								
7	28/09/2016		BH3	0.7-0.8		0.2	Silty Clay												
8	27/09/2016		BH4	0.05-0.15		0.1	Fill				✓								
9	27/09/2016		BH4	0.4-0.5		0	Fill												
10	27/09/2016		BH4	0.9-1.0		0	Silty Clay												
11	28/09/2016		BH5	0.05-0.15		0	Fill				✓								
12	28/09/2016		BH5	0.4-0.5		0.3	Silty Clay												
13	28/09/2016		BH5	0.9-1.0		0.4	Silty Clay												
14	28/09/2016		BH6	0.1-0.2		0.2	Fill				✓								
15	28/09/2016		BH6	0.7-0.95		0.2	Sandy Clay												
16	27/09/2016		BH7	0.15-0.25		0.3	Silty Clay				✓								
17	27/09/2016		BH7	0.4-0.5		0.2	Silty Clay		✓										
18	27/09/2016		BH7	0.9-1.0		0.4	Silty Clay												
19	30/09/2016		BH8	0.1-0.2		0.3	Fill				✓								
20	30/09/2016		BH8	0.4-0.5		0.1	Sandy Clay												
21	28/09/2016		BH9	0.2-0.3		0.1	Fill				✓								
22	28/09/2016		BH9	0.5-0.6		0.1	Sandy Clay		✓										
23	28/09/2016		BH10	0.15-0.25		0	Fill				✓								
24	28/09/2016		BH10	0.9-1.0		0	Silty Clay		✓										
25	30/09/2016		BH11	0.1-0.2		0.2	Silty Clay				✓								
26	30/09/2016		BH11	0.4-0.5		0	Silty Clay												
27	6/10/2016		BH12	0.0-0.2		0.3	Fill				✓								
28	6/10/2016		BH12	0.5-0.6		0.2	Fill												
29	6/10/2016		BH12	0.9-1.0		0.2	Fill		✓										
30	6/10/2016		BH13	0.0-0.2		0.1	Fill												
31	6/10/2016		BH13	0.5-0.6		0.1	Fill				✓								
32	6/10/2016		BH13	0.9-1.0		0.1	Fill												
33	27/09/2016		DUPA							✓									
34	30/09/2016		DUPB							✓									
35	30/09/2016		DUPC							✓									
36	30/09/2016		FR												✓				
37	27/09/2016		TB												✓				
NR	27/09/2016		TS												✓				

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

Relinquished By: Priya Dass	Date: 7/10/16	Time:	Received By:	Date:

ENVIROLAB GROUP
Environmental Sample
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 154919

Date Received: 07/10
Time Received: 16:30
Received by: N-R
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client Details	
Client	Environmental Investigation Services
Attention	Priya Dass

Sample Login Details	
Your Reference	E29807KR, Macquarie Park
Envirolab Reference	**154919**
Date Sample Received	07/10/2016
Date Instructions Received	07/10/2016
Date Results Expected to be Reported	**14/10/2016**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 water 36 soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	15.4
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples
missing TS

Please direct any queries to:

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

Sample and Testing Details on following page

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

Sample Id	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil*	*Organochlorine Pesticides in soil*	*Organophosphorus Pesticides*	*PCBs in Soil*	*Acid Extractable metals in soil*	*Asbestos ID - soils*	*BTEX in Water*	*On Hold*
BH1-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
BH1-0.2-0.3										✓
BH1-0.5-0.6										✓
BH2-0.0-0.1	✓	✓	✓	✓	✓	✓	✓	✓		
BH2-0.4-0.5	✓	✓	✓				✓			
BH3-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓		
BH3-0.7-0.8										✓
BH4-0.05-0.15	✓	✓	✓	✓	✓	✓	✓	✓		
BH4-0.4-0.5										✓
BH4-0.9-1.0										✓
BH5-0.05-0.15	✓	✓	✓	✓	✓	✓	✓	✓		
BH5-0.4-0.5										✓
BH5-0.9-1.0										✓
BH6-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓		
BH6-0.7-0.95										✓
BH7-0.15-0.25	✓	✓	✓	✓	✓	✓	✓	✓		
BH7-0.4-0.5	✓	✓	✓				✓			
BH7-0.9-1.0										✓
BH8-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓		
BH8-0.4-0.5										✓
BH9-0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓		
BH9-0.5-0.6	✓	✓	✓				✓			
BH10-0.15-0.25	✓	✓	✓	✓	✓	✓	✓	✓		
BH10-0.9-1.0	✓	✓	✓				✓			
BH11-0.1-0.2	✓	✓	✓	✓	✓	✓	✓	✓		
BH11-0.4-0.5										✓
BH12-0.0-0.2	✓	✓	✓	✓	✓	✓	✓	✓		
BH12-0.5-0.6										✓
BH12-0.9-1.0	✓	✓	✓				✓			
BH13-0.0-0.2										✓
BH13-0.5-0.6	✓	✓	✓	✓	✓	✓	✓	✓		
BH13-0.9-1.0										✓
DUPA	✓	✓	✓	✓	✓	✓	✓			
DUPB	✓	✓	✓	✓	✓	✓	✓			
DUPC	✓	✓	✓	✓	✓	✓	✓			
FR									✓	
TB	✓									

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 154919

Client:

Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention: Priya Dass

Sample log in details:

Your Reference:	**E29807KR, Macquarie Park**
No. of samples:	1 water 36 soils
Date samples received / completed instructions received	07/10/16 / 07/10/16

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: / Issue Date:	14/10/16 / 14/10/16
Date of Preliminary Report:	Not Issued

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

Results Approved By:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	154919-1	154919-4	154919-5	154919-6	154919-8
Your Reference	---------- -	BH1	BH2	BH2	BH3	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.4-0.5	0.1-0.2	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	27/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	83	81	83	85	81

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	154919-11	154919-14	154919-16	154919-17	154919-19
Your Reference	---------- -	BH5	BH6	BH7	BH7	BH8
Depth	----------	0.05-0.15	0.1-0.2	0.15-0.25	0.4-0.5	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	27/09/2016	27/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	84	80	77	76	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	154919-21	154919-22	154919-23	154919-24	154919-25
Your Reference	----------	BH9	BH9	BH10	BH10	BH11
Depth	- ----------	0.2-0.3	0.5-0.6	0.15-0.25	0.9-1.0	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	80	77	77	80	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference:	UNITS	154919-27	154919-29	154919-31	154919-33	154919-34
Your Reference	----------	BH12	BH12	BH13	DUPA	DUPB
Depth	- ----------	0.0-0.2	0.9-1.0	0.5-0.6	-	-
Date Sampled		6/10/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC6 - C9	mg/kg	<25	<25	<25	<25	<25
TRHC6 - C10	mg/kg	<25	<25	<25	<25	<25
vTPHC6 - C10 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
Surrogate aaa-Trifluorotoluene	%	82	81	77	83	79

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	154919-37	154919-38
Your Reference	----------	TB	TS
	-		
Depth	----------	-	-
Date Sampled		27/09/2016	27/09/2016
Type of sample		Soil	soil
Date extracted	-	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016
TRHC$_6$ - C$_9$	mg/kg	<25	[NA]
TRHC$_6$ - C$_{10}$	mg/kg	<25	[NA]
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25	[NA]
Benzene	mg/kg	<0.2	98%
Toluene	mg/kg	<0.5	98%
Ethylbenzene	mg/kg	<1	99%
m+p-xylene	mg/kg	<2	99%
o-Xylene	mg/kg	<1	100%
naphthalene	mg/kg	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	84	77

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	154919-1	154919-4	154919-5	154919-6	154919-8
Your Reference	---------- -	BH1	BH2	BH2	BH3	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.4-0.5	0.1-0.2	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	27/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	72	72	73	70	71

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	154919-11	154919-14	154919-16	154919-17	154919-19
Your Reference	---------- -	BH5	BH6	BH7	BH7	BH8
Depth	----------	0.05-0.15	0.1-0.2	0.15-0.25	0.4-0.5	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	27/09/2016	27/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	200
TRHC$_{29}$ - C$_{36}$	mg/kg	240	<100	<100	<100	710
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	230	<100	<100	<100	670
TRH>C$_{34}$-C$_{40}$	mg/kg	330	<100	<100	<100	870
Surrogate o-Terphenyl	%	74	70	71	71	75

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	154919-21	154919-22	154919-23	154919-24	154919-25
Your Reference	---------- -	BH9	BH9	BH10	BH10	BH11
Depth	----------	0.2-0.3	0.5-0.6	0.15-0.25	0.9-1.0	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	70	79	73	70	70

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	154919-27	154919-29	154919-31	154919-33	154919-34
Your Reference	---------- -	BH12	BH12	BH13	DUPA	DUPB
Depth	----------	0.0-0.2	0.9-1.0	0.5-0.6	-	-
Date Sampled		6/10/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100	<100	<100	<100	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	71	74	71	74	69

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	154919-1 BH1 0.0-0.1 28/09/2016 Soil	154919-4 BH2 0.0-0.1 28/09/2016 Soil	154919-5 BH2 0.4-0.5 28/09/2016 Soil	154919-6 BH3 0.1-0.2 28/09/2016 Soil	154919-8 BH4 0.05-0.15 27/09/2016 Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Total Positive PAHs	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	96	97	109	104	95

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	154919-11 BH5 0.05-0.15 28/09/2016 Soil	154919-14 BH6 0.1-0.2 28/09/2016 Soil	154919-16 BH7 0.15-0.25 27/09/2016 Soil	154919-17 BH7 0.4-0.5 27/09/2016 Soil	154919-19 BH8 0.1-0.2 30/09/2016 Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	<0.1	<0.1	0.2
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Total Positive PAHs	mg/kg	0.32	NIL (+)VE	NIL (+)VE	NIL (+)VE	0.17
Surrogate p-Terphenyl-d14	%	105	102	99	102	97

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- - ---------- 	154919-21 BH9 0.2-0.3 28/09/2016 Soil	154919-22 BH9 0.5-0.6 28/09/2016 Soil	154919-23 BH10 0.15-0.25 28/09/2016 Soil	154919-24 BH10 0.9-1.0 28/09/2016 Soil	154919-25 BH11 0.1-0.2 30/09/2016 Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.2	<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	0.6	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.8	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.9	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.6	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.8	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.5	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	<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	0.3	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	5.7	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	95	103	104	102	99

PAHs in Soil Our Reference: Your Reference	UNITS ----------	154919-27 BH12	154919-29 BH12	154919-31 BH13	154919-33 DUPA	154919-34 DUPB
Depth	-	0.0-0.2	0.9-1.0	0.5-0.6	-	-
Date Sampled	----------	6/10/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.07	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Total Positive PAHs	mg/kg	0.40	0.11	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	98	100	100	96	95

Organochlorine Pesticides in soil						
Our Reference:	UNITS	154919-1	154919-4	154919-6	154919-8	154919-11
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	- ----------	0.0-0.1	0.0-0.1	0.1-0.2	0.05-0.15	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	27/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	12/10/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
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
Surrogate TCMX	%	89	90	88	85	91

Organochlorine Pesticides in soil						
Our Reference:	UNITS	154919-14	154919-16	154919-19	154919-21	154919-23
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	- ----------	0.1-0.2	0.15-0.25	0.1-0.2	0.2-0.3	0.15-0.25
Date Sampled		28/09/2016	27/09/2016	30/09/2016	28/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	12/10/2016	11/10/2016	11/10/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
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
Surrogate TCMX	%	83	89	88	85	85

Organochlorine Pesticides in soil						
Our Reference:	UNITS	154919-25	154919-27	154919-31	154919-33	154919-34
Your Reference	----------	BH11	BH12	BH13	DUPA	DUPB
Depth	- ----------	0.1-0.2	0.0-0.2	0.5-0.6	-	-
Date Sampled		30/09/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-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
beta-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
pp-DDD	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-DDT	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
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
Surrogate TCMX	%	83	87	82	83	82

Organophosphorus Pesticides						
Our Reference:	UNITS	154919-1	154919-4	154919-6	154919-8	154919-11
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.0-0.1	0.0-0.1	0.1-0.2	0.05-0.15	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	27/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	12/10/2016
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Ethion	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
Parathion	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
Surrogate TCMX	%	89	90	88	85	91

Organophosphorus Pesticides						
Our Reference:	UNITS	154919-14	154919-16	154919-19	154919-21	154919-23
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.1-0.2	0.15-0.25	0.1-0.2	0.2-0.3	0.15-0.25
Date Sampled		28/09/2016	27/09/2016	30/09/2016	28/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	12/10/2016	11/10/2016	11/10/2016
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Ethion	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
Parathion	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
Surrogate TCMX	%	83	89	88	85	85

Organophosphorus Pesticides Our Reference: Your Reference	UNITS ----------	154919-25 BH11	154919-27 BH12	154919-31 BH13	154919-33 DUPA	154919-34 DUPB
Depth	----------	0.1-0.2	0.0-0.2	0.5-0.6	-	-
Date Sampled		30/09/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
Azinphos-methyl (Guthion)	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
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
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
Ethion	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
Parathion	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
Surrogate TCMX	%	83	87	82	83	82

PCBs in Soil						
Our Reference:	UNITS	154919-1	154919-4	154919-6	154919-8	154919-11
Your Reference	----------	BH1	BH2	BH3	BH4	BH5
Depth	- ----------	0.0-0.1	0.0-0.1	0.1-0.2	0.05-0.15	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	27/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	12/10/2016
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
Surrogate TCLMX	%	89	90	88	85	91

PCBs in Soil						
Our Reference:	UNITS	154919-14	154919-16	154919-19	154919-21	154919-23
Your Reference	----------	BH6	BH7	BH8	BH9	BH10
Depth	- ----------	0.1-0.2	0.15-0.25	0.1-0.2	0.2-0.3	0.15-0.25
Date Sampled		28/09/2016	27/09/2016	30/09/2016	28/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	12/10/2016	11/10/2016	11/10/2016
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
Surrogate TCLMX	%	83	89	88	85	85

PCBs in Soil Our Reference: Your Reference	UNITS ----------	154919-25 BH11	154919-27 BH12	154919-31 BH13	154919-33 DUPA	154919-34 DUPB
Depth	----------	0.1-0.2	0.0-0.2	0.5-0.6	-	-
Date Sampled		30/09/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
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
Surrogate TCLMX	%	83	87	82	83	82

Acid Extractable metals in soil						
Our Reference:	UNITS	154919-1	154919-4	154919-5	154919-6	154919-8
Your Reference	----------	BH1	BH2	BH2	BH3	BH4
	-					
Depth	----------	0.0-0.1	0.0-0.1	0.4-0.5	0.1-0.2	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	27/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Arsenic	mg/kg	11	9	7	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	41	35	21	4	63
Copper	mg/kg	13	16	9	190	19
Lead	mg/kg	29	40	18	6	12
Mercury	mg/kg	0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	3	1	13	54
Zinc	mg/kg	49	57	11	36	43

Acid Extractable metals in soil						
Our Reference:	UNITS	154919-11	154919-14	154919-16	154919-17	154919-19
Your Reference	----------	BH5	BH6	BH7	BH7	BH8
	-					
Depth	----------	0.05-0.15	0.1-0.2	0.15-0.25	0.4-0.5	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	27/09/2016	27/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Arsenic	mg/kg	<4	<4	8	10	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	19	18	30	34	12
Copper	mg/kg	36	67	4	<1	81
Lead	mg/kg	2	3	22	22	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	39	49	7	1	7
Zinc	mg/kg	29	32	36	4	30

Acid Extractable metals in soil						
Our Reference:	UNITS	154919-21	154919-22	154919-23	154919-24	154919-25
Your Reference	----------	BH9	BH9	BH10	BH10	BH11
	-					
Depth	----------	0.2-0.3	0.5-0.6	0.15-0.25	0.9-1.0	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Arsenic	mg/kg	<4	6	10	8	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	29	28	77	26	21
Copper	mg/kg	71	<1	16	1	7
Lead	mg/kg	49	9	30	15	19
Mercury	mg/kg	0.1	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	61	1	29	<1	4
Zinc	mg/kg	82	1	61	4	24

Acid Extractable metals in soil						
Our Reference:	UNITS	154919-27	154919-29	154919-31	154919-33	154919-34
Your Reference	----------	BH12	BH12	BH13	DUPA	DUPB
	-					
Depth	----------	0.0-0.2	0.9-1.0	0.5-0.6	-	-
Date Sampled		6/10/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Arsenic	mg/kg	11	9	8	8	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	38	37	29	44	24
Copper	mg/kg	11	16	9	10	8
Lead	mg/kg	34	40	28	19	24
Mercury	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Nickel	mg/kg	2	3	3	23	3
Zinc	mg/kg	69	92	52	26	32

Acid Extractable metals in soil		
Our Reference:	UNITS	154919-39
Your Reference	----------	BH10 - [TRIPLICATE]
	-	
Depth	----------	0.15-0.25
Date Sampled		28/09/2016
Type of sample		Soil
Date prepared	-	10/10/2016
Date analysed	-	10/10/2016
Arsenic	mg/kg	8
Cadmium	mg/kg	<0.4
Chromium	mg/kg	91
Copper	mg/kg	23
Lead	mg/kg	26
Mercury	mg/kg	<0.1
Nickel	mg/kg	53
Zinc	mg/kg	59

Moisture						
Our Reference:	UNITS	154919-1	154919-4	154919-5	154919-6	154919-8
Your Reference	----------	BH1	BH2	BH2	BH3	BH4
	-					
Depth	----------	0.0-0.1	0.0-0.1	0.4-0.5	0.1-0.2	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	27/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
Moisture	%	18	16	16	6.4	18

Moisture						
Our Reference:	UNITS	154919-11	154919-14	154919-16	154919-17	154919-19
Your Reference	----------	BH5	BH6	BH7	BH7	BH8
	-					
Depth	----------	0.05-0.15	0.1-0.2	0.15-0.25	0.4-0.5	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	27/09/2016	27/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
Moisture	%	3.7	12	22	20	7.4

Moisture						
Our Reference:	UNITS	154919-21	154919-22	154919-23	154919-24	154919-25
Your Reference	----------	BH9	BH9	BH10	BH10	BH11
	-					
Depth	----------	0.2-0.3	0.5-0.6	0.15-0.25	0.9-1.0	0.1-0.2
Date Sampled		28/09/2016	28/09/2016	28/09/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
Moisture	%	7.9	15	20	15	12

Moisture						
Our Reference:	UNITS	154919-27	154919-29	154919-31	154919-33	154919-34
Your Reference	----------	BH12	BH12	BH13	DUPA	DUPB
	-					
Depth	----------	0.0-0.2	0.9-1.0	0.5-0.6	-	-
Date Sampled		6/10/2016	6/10/2016	6/10/2016	28/09/2016	30/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	10/10/2016	10/10/2016	10/10/2016	10/10/2016	10/10/2016
Date analysed	-	11/10/2016	11/10/2016	11/10/2016	11/10/2016	11/10/2016
Moisture	%	8.1	6.0	17	22	14

Asbestos ID - soils						
Our Reference:	UNITS	154919-1	154919-4	154919-6	154919-8	154919-11
Your Reference	---------- -	BH1	BH2	BH3	BH4	BH5
Depth	----------	0.0-0.1	0.0-0.1	0.1-0.2	0.05-0.15	0.05-0.15
Date Sampled		28/09/2016	28/09/2016	28/09/2016	27/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/10/2016	12/10/2016	12/10/2016	12/10/2016	12/10/2016
Sample mass tested	g	Approx. 25g	Approx. 45g	Approx. 40g	Approx. 60g	Approx. 20g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown clayey soil	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	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

Asbestos ID - soils						
Our Reference:	UNITS	154919-14	154919-16	154919-19	154919-21	154919-23
Your Reference	---------- -	BH6	BH7	BH8	BH9	BH10
Depth	----------	0.1-0.2	0.15-0.25	0.1-0.2	0.2-0.3	0.15-0.25
Date Sampled		28/09/2016	27/09/2016	30/09/2016	28/09/2016	28/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	12/10/2016	12/10/2016	12/10/2016	12/10/2016	12/10/2016
Sample mass tested	g	Approx. 65g	Approx. 40g	Approx. 35g	Approx. 20g	Approx. 40g
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	-	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

Asbestos ID - soils				
Our Reference:	UNITS	154919-25	154919-27	154919-31
Your Reference	----------	BH11	BH12	BH13
	-			
Depth	----------	0.1-0.2	0.0-0.2	0.5-0.6
Date Sampled		30/09/2016	6/10/2016	6/10/2016
Type of sample		Soil	Soil	Soil
Date analysed	-	12/10/2016	12/10/2016	12/10/2016
Sample mass tested	g	Approx. 25g	Approx. 10g	Approx. 15g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected

BTEX in Water		
Our Reference:	UNITS	154919-36
Your Reference	----------	FR
	-	
Depth	----------	-
Date Sampled		30/09/2016
Type of sample		water
Date extracted	-	11/10/2016
Date analysed	-	11/10/2016
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Surrogate Dibromofluoromethane	%	108
Surrogate toluene-d8	%	96
Surrogate 4-BFB	%	111

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	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-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, 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-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
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.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			11/10/2016	154919-1	11/10/2016 || 11/10/2016	LCS-10	11/10/2016
TRHC$_{6}$ - C$_{9}$	mg/kg	25	Org-016	<25	154919-1	<25 || <25	LCS-10	91%
TRHC$_{6}$ - C$_{10}$	mg/kg	25	Org-016	<25	154919-1	<25 || <25	LCS-10	91%
Benzene	mg/kg	0.2	Org-016	<0.2	154919-1	<0.2 || <0.2	LCS-10	76%
Toluene	mg/kg	0.5	Org-016	<0.5	154919-1	<0.5 || <0.5	LCS-10	90%
Ethylbenzene	mg/kg	1	Org-016	<1	154919-1	<1 || <1	LCS-10	96%
m+p-xylene	mg/kg	2	Org-016	<2	154919-1	<2 || <2	LCS-10	97%
o-Xylene	mg/kg	1	Org-016	<1	154919-1	<1 || <1	LCS-10	98%
naphthalene	mg/kg	1	Org-014	<1	154919-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	85	154919-1	83 || 81 || RPD: 2	LCS-10	82%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			11/10/2016	154919-1	11/10/2016 || 11/10/2016	LCS-10	11/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	154919-1	<50 || <50	LCS-10	93%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	154919-1	<100 || <100	LCS-10	92%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	154919-1	<100 || <100	LCS-10	82%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	154919-1	<50 || <50	LCS-10	93%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	154919-1	<100 || <100	LCS-10	92%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	154919-1	<100 || <100	LCS-10	82%
Surrogate o-Terphenyl	%		Org-003	83	154919-1	72 || 72 || RPD: 0	LCS-10	87%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	LCS-10	112%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	LCS-10	117%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	LCS-10	102%
Anthracene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	LCS-10	116%
Pyrene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	LCS-10	119%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Benzo(b,j +k)fluoranthene	mg/kg	0.2	Org-012	<0.2	154919-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	154919-1	<0.05 || <0.05	LCS-10	117%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	98	154919-1	96 || 99 || RPD: 3	LCS-10	130%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			12/10/2016	154919-1	11/10/2016 || 11/10/2016	LCS-10	11/10/2016
HCB	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	121%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	94%
Heptachlor	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	106%
delta-BHC	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	98%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	99%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	96%
Dieldrin	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	106%
Endrin	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	108%
pp-DDD	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	105%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	LCS-10	104%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	87	154919-1	89 || 89 || RPD: 0	LCS-10	124%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			12/10/2016	154919-1	11/10/2016 || 11/10/2016	LCS-10	11/10/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	88%
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	107%
Dimethoate	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	119%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	104%
Malathion	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	94%
Parathion	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	117%
Ronnel	mg/kg	0.1	Org-008	<0.1	154919-1	<0.1 || <0.1	LCS-10	94%
Surrogate TCMX	%		Org-008	87	154919-1	89 || 89 || RPD: 0	LCS-10	92%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			12/10/2016	154919-1	11/10/2016 || 11/10/2016	LCS-10	11/10/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	LCS-10	100%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	154919-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	87	154919-1	89 || 89 || RPD: 0	LCS-10	92%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Date analysed	-			10/10/2016	154919-1	10/10/2016 || 10/10/2016	LCS-10	10/10/2016
Arsenic	mg/kg	4	Metals-020	<4	154919-1	11 || 11 || RPD: 0	LCS-10	122%
Cadmium	mg/kg	0.4	Metals-020	<0.4	154919-1	<0.4 || <0.4	LCS-10	115%
Chromium	mg/kg	1	Metals-020	<1	154919-1	41 || 37 || RPD: 10	LCS-10	118%
Copper	mg/kg	1	Metals-020	<1	154919-1	13 || 11 || RPD: 17	LCS-10	119%
Lead	mg/kg	1	Metals-020	<1	154919-1	29 || 26 || RPD: 11	LCS-10	113%
Mercury	mg/kg	0.1	Metals-021	<0.1	154919-1	0.1 || 0.1 || RPD: 0	LCS-10	94%
Nickel	mg/kg	1	Metals-020	<1	154919-1	2 || 2 || RPD: 0	LCS-10	110%
Zinc	mg/kg	1	Metals-020	<1	154919-1	49 || 44 || RPD: 11	LCS-10	112%

QUALITY CONTROL BTEX in Water	UNITS	PQL	METHOD	Blank
Date extracted	-			11/10/2016
Date analysed	-			11/10/2016
Benzene	µg/L	1	Org-016	<1
Toluene	µg/L	1	Org-016	<1
Ethylbenzene	µg/L	1	Org-016	<1
m+p-xylene	µg/L	2	Org-016	<2
o-xylene	µg/L	1	Org-016	<1
Surrogate Dibromofluoromethane	%		Org-016	107
Surrogate toluene-d8	%		Org-016	102
Surrogate 4-BFB	%		Org-016	93

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	11/10/2016 || 11/10/2016	154919-4	11/10/2016
$TRHC_6$ - C_9	mg/kg	154919-23	<25 || <25	154919-4	96%
$TRHC_6$ - C_{10}	mg/kg	154919-23	<25 || <25	154919-4	96%
Benzene	mg/kg	154919-23	<0.2 || <0.2	154919-4	78%
Toluene	mg/kg	154919-23	<0.5 || <0.5	154919-4	93%
Ethylbenzene	mg/kg	154919-23	<1 || <1	154919-4	101%
m+p-xylene	mg/kg	154919-23	<2 || <2	154919-4	103%
o-Xylene	mg/kg	154919-23	<1 || <1	154919-4	104%
naphthalene	mg/kg	154919-23	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	154919-23	77 || 77 || RPD: 0	154919-4	82%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	11/10/2016 || 11/10/2016	154919-4	11/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	154919-23	<50 || <50	154919-4	92%
TRHC$_{15}$ - C$_{28}$	mg/kg	154919-23	<100 || <100	154919-4	88%
TRHC$_{29}$ - C$_{36}$	mg/kg	154919-23	<100 || <100	154919-4	140%
TRH>C$_{10}$-C$_{16}$	mg/kg	154919-23	<50 || <50	154919-4	92%
TRH>C$_{16}$-C$_{34}$	mg/kg	154919-23	<100 || <100	154919-4	88%
TRH>C$_{34}$-C$_{40}$	mg/kg	154919-23	<100 || <100	154919-4	140%
Surrogate o-Terphenyl	%	154919-23	73 || 71 || RPD: 3	154919-4	72%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Naphthalene	mg/kg	154919-23	<0.1 || <0.1	154919-4	103%
Acenaphthylene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	154919-23	<0.1 || <0.1	154919-4	107%
Phenanthrene	mg/kg	154919-23	<0.1 || <0.1	154919-4	130%
Anthracene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	154919-23	<0.1 || <0.1	154919-4	99%
Pyrene	mg/kg	154919-23	<0.1 || <0.1	154919-4	107%
Benzo(a)anthracene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	154919-23	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	154919-23	<0.05 || <0.05	154919-4	114%
Indeno(1,2,3-c,d)pyrene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	154919-23	104 || 98 || RPD: 6	154919-4	132%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	11/10/2016 || 11/10/2016	154919-4	11/10/2016
HCB	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	154919-23	<0.1 || <0.1	154919-4	119%
gamma-BHC	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	154919-23	<0.1 || <0.1	154919-4	93%
Heptachlor	mg/kg	154919-23	<0.1 || <0.1	154919-4	104%
delta-BHC	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	154919-23	<0.1 || <0.1	154919-4	97%
Heptachlor Epoxide	mg/kg	154919-23	<0.1 || <0.1	154919-4	101%
gamma-Chlordane	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	154919-23	<0.1 || <0.1	154919-4	99%
Dieldrin	mg/kg	154919-23	<0.1 || <0.1	154919-4	107%
Endrin	mg/kg	154919-23	<0.1 || <0.1	154919-4	111%
pp-DDD	mg/kg	154919-23	<0.1 || <0.1	154919-4	110%
Endosulfan II	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	154919-23	<0.1 || <0.1	154919-4	119%
Methoxychlor	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%	154919-23	85 || 84 || RPD: 1	154919-4	116%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	11/10/2016 || 11/10/2016	154919-4	11/10/2016
Azinphos-methyl (Guthion)	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	154919-23	<0.1 || <0.1	154919-4	80%
Chlorpyriphos-methyl	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Diazinon	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Dichlorvos	mg/kg	154919-23	<0.1 || <0.1	154919-4	76%
Dimethoate	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	154919-23	<0.1 || <0.1	154919-4	106%
Fenitrothion	mg/kg	154919-23	<0.1 || <0.1	154919-4	97%
Malathion	mg/kg	154919-23	<0.1 || <0.1	154919-4	87%
Parathion	mg/kg	154919-23	<0.1 || <0.1	154919-4	107%
Ronnel	mg/kg	154919-23	<0.1 || <0.1	154919-4	93%
Surrogate TCMX	%	154919-23	85 || 84 || RPD: 1	154919-4	85%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	11/10/2016 || 11/10/2016	154919-4	11/10/2016
Aroclor 1016	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	154919-23	<0.1 || <0.1	154919-4	100%
Aroclor 1260	mg/kg	154919-23	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	154919-23	85 || 84 || RPD: 1	154919-4	85%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Date analysed	-	154919-23	10/10/2016 || 10/10/2016	154919-4	10/10/2016
Arsenic	mg/kg	154919-23	10 || 8 || RPD: 22	154919-4	101%
Cadmium	mg/kg	154919-23	<0.4 || <0.4	154919-4	103%
Chromium	mg/kg	154919-23	77 || 94 || RPD: 20	154919-4	104%
Copper	mg/kg	154919-23	16 || 23 || RPD: 36	154919-4	112%
Lead	mg/kg	154919-23	30 || 21 || RPD: 35	154919-4	92%
Mercury	mg/kg	154919-23	0.2 || 0.1 || RPD: 67	154919-4	88%
Nickel	mg/kg	154919-23	29 || 51 || RPD: 55	154919-4	99%
Zinc	mg/kg	154919-23	61 || 62 || RPD: 2	154919-4	86%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date extracted	-	154919-33	10/10/2016 || 10/10/2016
Date analysed	-	154919-33	11/10/2016 || 11/10/2016
TRHC$_6$ - C$_9$	mg/kg	154919-33	<25 || <25
TRHC$_6$ - C$_{10}$	mg/kg	154919-33	<25 || <25
Benzene	mg/kg	154919-33	<0.2 || <0.2
Toluene	mg/kg	154919-33	<0.5 || <0.5
Ethylbenzene	mg/kg	154919-33	<1 || <1
m+p-xylene	mg/kg	154919-33	<2 || <2
o-Xylene	mg/kg	154919-33	<1 || <1
naphthalene	mg/kg	154919-33	<1 || <1
Surrogate aaa-Trifluorotoluene	%	154919-33	83 || 109 || RPD: 27

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date extracted	-	154919-33	10/10/2016 || 10/10/2016
Date analysed	-	154919-33	11/10/2016 || 12/10/2016
TRHC$_{10}$ - C$_{14}$	mg/kg	154919-33	<50 || <50
TRHC$_{15}$ - C$_{28}$	mg/kg	154919-33	<100 || <100
TRHC$_{29}$ - C$_{36}$	mg/kg	154919-33	<100 || <100
TRH>C$_{10}$-C$_{16}$	mg/kg	154919-33	<50 || <50
TRH>C$_{16}$-C$_{34}$	mg/kg	154919-33	<100 || <100
TRH>C$_{34}$-C$_{40}$	mg/kg	154919-33	<100 || <100
Surrogate o-Terphenyl	%	154919-33	74 || 80 || RPD: 8

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date extracted	-	154919-33	10/10/2016 || 11/10/2016
Date analysed	-	154919-33	10/10/2016 || 11/10/2016
Naphthalene	mg/kg	154919-33	<0.1 || <0.1
Acenaphthylene	mg/kg	154919-33	<0.1 || <0.1
Acenaphthene	mg/kg	154919-33	<0.1 || <0.1
Fluorene	mg/kg	154919-33	<0.1 || <0.1
Phenanthrene	mg/kg	154919-33	<0.1 || <0.1
Anthracene	mg/kg	154919-33	<0.1 || <0.1
Fluoranthene	mg/kg	154919-33	<0.1 || <0.1
Pyrene	mg/kg	154919-33	<0.1 || <0.1
Benzo(a)anthracene	mg/kg	154919-33	<0.1 || <0.1
Chrysene	mg/kg	154919-33	<0.1 || <0.1
Benzo(b,j+k)fluoranthene	mg/kg	154919-33	<0.2 || <0.2
Benzo(a)pyrene	mg/kg	154919-33	<0.05 || <0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	154919-33	<0.1 || <0.1
Dibenzo(a,h)anthracene	mg/kg	154919-33	<0.1 || <0.1

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Benzo(g,h,i)perylene	mg/kg	154919-33	<0.1 || <0.1
Surrogate p-Terphenyl-d14	%	154919-33	96 || 123 || RPD: 25

QUALITY CONTROL BTEX in Water	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-W1	11/10/2016
Date analysed	-	[NT]	[NT]	LCS-W1	11/10/2016
Benzene	µg/L	[NT]	[NT]	LCS-W1	95%
Toluene	µg/L	[NT]	[NT]	LCS-W1	100%
Ethylbenzene	µg/L	[NT]	[NT]	LCS-W1	97%
m+p-xylene	µg/L	[NT]	[NT]	LCS-W1	102%
o-xylene	µg/L	[NT]	[NT]	LCS-W1	102%
Surrogate Dibromofluoromethane	%	[NT]	[NT]	LCS-W1	106%
Surrogate toluene-d8	%	[NT]	[NT]	LCS-W1	113%
Surrogate 4-BFB	%	[NT]	[NT]	LCS-W1	110%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 154919-23 for Ni. Therefore a triplicate result has been issued as laboratory sample number 154919-39.

Asbestos: Excessive sample volume was provided for asbestos analysis.
A portion of the supplied sample was sub-sampled according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.
Note: Samples 154919-6,11,14,16,19,25,27,31 were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier: Matt Mansfield
Asbestos ID was authorised by Approved Signatory: Matt Mansfield

INS: Insufficient sample for this test
NR: Test not required
<: Less than
PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than
NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was 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.