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Project 86548.20
19 September 2024
R.007.Rev1
LAR

Attention: Lloyd Henderson
Email: lloyd.henderson@dhl.com

Review of Supplementary Contamination Investigation - DHL Stage 2
Part of 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW

1. Introduction

Douglas Partners Pty Ltd (DP) has prepared this review of the supplementary contamination investigation (SCI) [1] as it pertains to the proposed Warehouse Development at DHL Stage 2 located at Part of 1953 - 2109 Elizabeth Drive, Badgerys Creek NSW ("the site", as shown in Drawing 1, Attachment A).

In June 2023, DP completed the SCI report for Robert Jones Developments Pty Ltd (RJD) of the wider Burra Park Development area. This review of the SCI was commissioned by Lloyd Henderson of DHL Supply Chain (Australia) Pty Limited and was undertaken in accordance with DP's proposal 86548.20.P.001.Rev0 dated 27 July 2023. It is understood based on documents provided by DHL, that the site is approximately 13.3 hectares (ha) in size. The SCI was required to support the State Significant Development Application (SSD 70817958) for the site.

DP has completed several contamination investigations relevant to the subject site including a detailed site investigation (DSI)[2] of the subject site. The DSI established that there was no evidence of widespread or significant contamination across the site. However, localised contamination in some areas of environmental concern (AECs) was observed as requiring a SCI to further investigate the AEC identified by the DSI and associated contaminants of potential concern (CoPC) to determine the vertical and lateral extent of the contamination issues and/or whether remediation is required.

The SCI fieldwork was completed at the site on 14 to 20 December 2022 and 7 to 9 February 2023 to assess the AEC identified as requiring further investigation. The AECs identified which required further works, relevant to the site, are summarised in Table 1 and shown in Drawing 2, Attachment B.

[1] DP *Report on Site Review Supplementary Contamination Investigation for Burra Park Development, 1953 – 2109 Elizabeth Drive, , Badgerys Creek, NSW, report reference* 86548.14.R.001.Rev0 dated 30 June 2023 (DP, 2023 – 'the SCI')
[2] DP *Report on Site Review Detailed Site Investigation for Contamination, DHL Stage 2, Part of 1953 – 2109 Elizbeth Drive, Badgerys Creek, NSW, report reference* 86548.20.R.001.Rev0 dated 8 August 2023 (DP, 2023a – 'the DSI Stage 2')

Table 1: Summary of Further Investigations, Delineation and/or Remediation Requirements

Location of Impact	Source and Contaminants of Potential Concern (CoPC)	Further Assessment/ Delineation Action Required
AEC 36	Timber Power Poles	The DSI (2023), identified fill impacted soils with concentrations of Heavy Metals (As), TRH, benzo(a)pyrene and total PAHs and total PCBs and exceeding the HILs, ESLs and management limits at timber power pole locations PP32 and PP35. DP considered that soil around each timber power pole within the subject site should be assessed to better inform the extent of soil remediation required. A targeted investigation of power poles was required at the site to establish and further define which poles are suitable to be retained on site and which will require remediation and the extents of required remediation.
AEC 15 and 16,	ACM pipe network – asbestos	ACM pipes loose above ground should be removed and disposed of. The process of remediation and validation should be documented in the RAP.

The SCI was required to further investigate the above identified AEC and associated CoPC relevant to subject site to determine the vertical and lateral extent of the contamination issues and/or whether remediation will be required.

2. Summary of Sampling Completed within the Identified AEC at the Site

2.1 Soil Sampling Rationale and Methodology

The following SCI fieldwork was completed at the site on 14 to 20 December 2022 and 7 to 9 February 2023 to assess the AEC identified, within the site, as requiring further investigation.

2.1.1 AEC36

Delineation Investigation of Power Poles PP32 and PP35

The DSI identified shallow soils impacted with concentrations of TRH, benzo(a)pyrene, total PAHs and total PCBs exceeding the SAC at PP32 and PP35 timber power pole locations (where DSI surface samples SS3 and SS4 were collected). A targeted investigation of two power poles, where exceedances were identified, was required to further define which are suitable to be retained on site and which will require remediation.

The targeted delineation investigation around PP32 and PP35 comprised the following:

- Delineation of TRH, PAH and PCBs impacted topsoil surrounding each power pole (mentioned above) to determine the extent of the remediation areas prior to the removal of poles;

- Collect soil samples at the base of PP32 and PP35 at a depth of 0.3 m bgl to assess the vertical extent of impact to underlying soils/clay;
- To assess the lateral extent of impact, initial sampling was completed at 1 m and 1.5 m lateral step outs to the North, East, South and West of PP32 and PP35, and at depths of 0.1 m and 0.3 m. The 1 m lateral at 0.1 m depth samples were analysed, with other samples held pending any sample exceeding site assessment criteria; and
- All delineation samples collected for the wider TNG site during (DP, 2023a – 'the SCI') were analysed for PAH (primary contaminant), with 10% of samples analysed for TRH and 5% analysed for PCBs particularly targeting power poles with observable transformer boxes.

Delineation sampling of the soil surrounding PP32 and PP35 was completed using a handheld shovel as summarised in Table 2.

Table 2: Summary of Power Pole, Delineation Sample and Approximate Depth

Power Pole	Delineation Samples	Approximate distance of Sample from Power Pole (m)	Approximate Depth of Sample
PP32 (DSI sample location SS3)	North: PP32-N1/0.1 South: PP32-S1/0.1 East: PP32-E1/0.1 West: PP32-W1/0.1	1.0	0.2
	Vertical Delineation sample PP32/0.3	0.1- 0.2	0.3
PP35 (DSI sample location SS4)	North: PP34-N1/0.1 South: PP34-S1/0.1 East: PP34-E1/0.1 West: PP34-W1/0.1	1.0	0.2
	Vertical Delineation sample PP34/0.3	0.1- 0.2	0.3

Remaining Power Poles PP31, PP33, PP34 and PP39

The DSI scope only included sampling from two of the six power poles on-site and therefore recommended that soil around each of the remaining on-site timber power poles should be further assessed to better inform the extent of soil remediation required.

The following was completed for the remaining four power poles (PP31, PP33, PP34 and PP39), which had not been previously sampled, relevant to the subject site:

- Collection of a surface soil samples from the base of each power pole that have previously not been assessed; and
- All surface soil samples were sent to a NATA accredited laboratory for various analysis for power pole related CoPC including PAH, TRH and PCB.

3. Results and Discussion

3.1 Laboratory Analytical Results and Discussion

The results of laboratory analysis are summarised in the Table B1 in Attachment B. The laboratory certificate(s) of analysis together with the chain of custody and sample receipt information are provided in Attachment C.

3.1.1 AEC36 – Power Poles

Delineation Sampling

Concentrations of PAHs at PP32 and PP35 were reported below the commercial / industrial human health investigation levels in most samples submitted for analysis with the exception of the vertical delineation sample PP32/0.3.

The results of power pole delineation sampling at power poles (PP32 and PP35), generally identified the lateral extents of surface topsoil impacted by power pole related CoPC, as requiring remediation, to be limited to within 1 m (north, south, east and west) of each of the power poles across an approximate area of 4 m^2. The vertical extent of impact to topsoil was delineated in the vicinity of power pole (PP35) to depths of approximately 0.3 m bgl with the exception of power pole PP32. The vertical extent of impact to topsoils at power pole PP32 should be confirmed with validation sampling at the time of remediation.

It is noted that several samples also had concentrations of B(a)P that exceeded the ESL of 0.7 mg/kg with concentrations of up to150 mg/kg. It is noted that the B(a)P ESL is a low reliability value. Higher reliability screening levels have been published in CRC CARE *Risk-based Management and Remediation Guidance for Benzo(a)pyrene* (CRC CARE, 2017). The high reliability value of 33 mg/kg for public open space and 172 mg/kg for commercial/industrial (95% confidence) for fresh B(a)P suggests that the concentrations of B(a)P detected in the delineation samples at the site are unlikely to pose an unacceptable risk to terrestrial ecosystems and therefore the exceedances are not considered to be of concern.

Sampling of Remaining Power Poles

Based on the results of sampling of the remaining power poles on-site, and those samples with power pole related CoPC exceeding the commercial/industrial land use criteria, remediation will be required of soil in the vicinity of power pole PP33. Based on the results of the delineation sampling, the extent of impact to soil from related CoPC in the vicinity of remaining power poles requiring remediation is expected to be limited to approximately 1 m from each power pole. The lateral and vertical extents of impact from power pole related CoPC should be confirmed with validation sampling at the time of remediation.

Exceedances for ESLs and or public open space criteria only (without exceeding commercial/industrial criteria) were not considered to warrant remediation of soil in the vicinity of the following power poles (PP31, PP34 and PP39) given the primary commercial/industrial land use of the site and the limited potential for public or ecological access to soil.

4. Revised Conceptual Site Model

A CSM was documented in the SAQP (DP, 2020)[3] and updated during the DSI (DP, 2023). The data collected for the SCI has generally confirmed that certain potential contaminant sources outlined in the CSM pose a potentially complete pathway to the identified receptor(s) whilst others do not. This is summarised in Table 3.

Table 3: Updated Summary of Potentially Complete Exposure Pathways (Proposed Land Use)

Source	Transport Pathway	Receptor	Risk Management Action/ Remediation Action Required
AEC36			
Timber treatment and PCBs in transmission box(es): Metals, TRH, benzo(a)pyrene, total PAHs, total PCBs.	Direct contact of contaminated ground, ingestion and dermal contact with soil or water, inhalation of dust, leaching of contaminants and vertical migration into groundwater, lateral migration of groundwater.	Future site users Adjacent land users Ecological receptors	The results of power pole delineation sampling at power poles PP32 and PP35, generally identified the lateral extents of surface topsoil impacted by power pole related COCP, as requiring remediation, to be limited to within 1 m (north, south, east and west) of each of the power poles across an approximate area of 4 m^2. The vertical extent of impact to topsoil was delineated in the vicinity of power pole (PP35) to depths of approximately 0.3 m bgl. The vertical extent of impact to topsoils at power pole PP32 should be confirmed with validation sampling at the time of remediation. Based on the results of sampling of the remaining power poles on-site, and those samples with power pole related CoPC exceeding the commercial/industrial land use criteria, remediation will be required of soil in the vicinity of power pole PP33. Based on the results of the delineation sampling, the extent of impact to soil from related CoPC in the vicinity of remaining power poles requiring remediation is expected to be limited to approximately 1 m from each power pole. The lateral and vertical extents of impact from power pole related CoPC should be confirmed with validation sampling at the time of remediation. Exceedances for ESLs and or public open space criteria only (without exceeding commercial/industrial criteria) were not considered to warrant remediation of soil in the vicinity of the following power poles (PP31, PP34 and PP39) given the primary commercial/industrial land use of the site and the limited potential for public or ecological access to soil.

[3] DP, *Report on Sampling and Analysis Quality Plan, The Northern Gateway, 1953 – 2109 Elizabeth Drive, Badgerys Creek, NSW*, Project 86548.03, Rev. 1 (DP, 2020)

Source	Transport Pathway	Receptor	Risk Management Action/ Remediation Action Required
AEC 15 and 16			
ACM pipe network – asbestos	Inhalation of dust	Future site users Adjacent land users	The ACM pipe network should be removed and all branches of former pipework followed and validated. Where observed, ACM fragments on the surface should be removed by hand. A RAP is required to document the process for the remediation and validation works. There is the potential that an ACM pipe network not observed in this investigation is present at the site.

5. Conclusions and Recommendations

The results of targeted testing across the site during the SCI and collection of soil samples for laboratory analysis of the associated CoPC identified AEC15, AEC16 and AEC36 (as described in Table 3) at the site as requiring risk management and/or remediation. The identified AEC are considered typical of other rural properties in the area and are generally considered relatively localised, limited in extent and not representative of widespread gross contamination of the site. All of the identified AEC requiring remediation are readily amenable to clean-up through conventional remediation approaches.

Based on the results of the SCI, it is considered that the site can be made suitable for the proposed commercial/industrial development subject to implementation of the recommendations above.

The preparation of a RAP will be required to detail the remediation and validation requirements for each of the AEC requiring remediation to render the site suitable for the proposed land use.

6. References

CRC CARE. (2017). *Risk-based Management and Remediation Guidance for Benzo(a)pyrene.* Technical Report no. 39: Cooperative Research Centre for Contamination Assessment and Remediation of the Environment.

HEPA. (2020). *PFAS National Environmental Management Plan (NEMP).* Version 2.0: Heads of EPAs Australia and New Zealand and Australian Government Department of the Environment.

NEPC. (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) [NEPM].* Australian Government Publishing Services Canberra: National Environment Protection Council.

NSW EPA. (1995). *Contaminated Sites, Sampling Design Guidelines.* NSW Environment Protection Authority.

NSW EPA. (2020). *Guidelines for Consultants Reporting on Contaminated Land.* Contaminated Land Guidelines: NSW Environment Protection Authority.

7. Limitations

Douglas Partners Pty Ltd (DP) has prepared this report for this project at DHL Stage 2, Part of 1953 – 2109 Elizabeth Drive, Badgerys Creek NSW in accordance with DP's proposal 86548.20.P.001.Rev0 dated 27 July 2023 and acceptance email received from DHL Supply Chain (Australia) Pty Limited. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use DHL Supply Chain (Australia) Pty Limited for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

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

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

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

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

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

Please contact the undersigned if you have any questions on this matter.

Yours faithfully
Douglas Partners Pty Ltd

Lizbeth Rodriguez
Environmental Scientist

Reviewed by

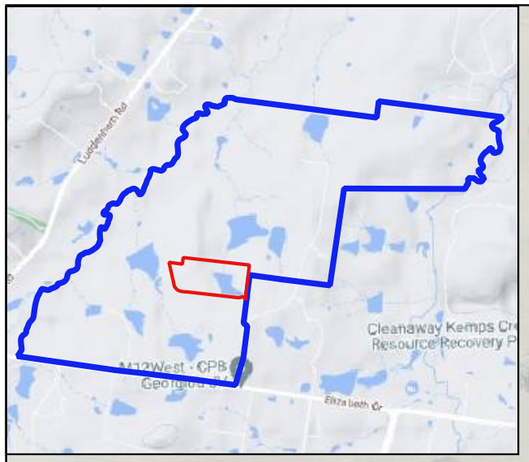
p.p. **Dean Woods**
Principal

Attachment A: Drawings

Attachment B: Results Summary Table B1

Attachment C: Laboratory Certificates of Analysis and Chain-of-Custody documentation

Attachment D: About this Report



Stage 2

0 250 500 750 1,000 m

Legend

- DHL Stage 2
- DHL Site Boundary
- The Northern Gateway Boundary (TNG)

Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: DHL Supply Chain (Australia) Pty Ltd		
OFFICE: Macarthur	DRAWN BY: LAR	
SCALE: As shown	DATE: 24 July 2023	

TITLE: **Drawing 1 - Site Locality and Layout**
DHL Suplementary Contamination Investigation - Stage 2
Part of 1953 - 2109 Elizabeth Drive, Badgerys Creek, NSW

N
MGA

PROJ. #:	86548.20.R.007
DRAWING No:	1
REVISION:	0

Douglas Partners
Geotechnics | Environment | Groundwater

CLIENT: Robert Jones Developments Pty Ltd		
OFFICE: Macarthur	DRAWN BY: LAR	
SCALE: As shown	DATE: 24 July 2023	

TITLE: **Drawing 2 - AEC15, AEC17 and Timber Power Poles (AEC36)**
DHL Suplementary Contamination Investigation - Stage 2
Part of 1953 - 2109 Elizabeth Drive, Badgerys Creek, NSW

N
MGA

PROJ. #: 86548.20.R.007	
DRAWING No:	2
REVISION:	A

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Table B1: Summary of Laboratory Results – TRH, PAH, PCB, Asbestos

			TRH				PAH				PCB								Asbestos
			TRH C6 - C10	TRH >C10-C16	F3 (>C16-C34)	F4 (>C34-C40)	Naphthalene [b]	Benzo(a)pyrene (BaP)	Benzo(a)pyrene TEQ	Total PAHs	Arochlor 1016	Total PCB	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Aroclor 1260	Trace Analysis
		PQL	25	50	100	100	0.1	0.05	0.5	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
Sample ID	Depth	Sample Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
PP31/0.1	0.1 m	15.12.22	-	-	-	-	<0.1	11	20	96	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP32/0.3	0.3 m	20.12.22	-	-	-	-	4.9	56	85	450	<1	<1	<1	<1	<1	<1	<1	<1	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP32N-1/0.1	0.1 m	20.12.22	-	-	-	-	<0.1	10	19	160	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP32E-1/0.1	0.1 m	20.12.22	NT	NT	NT	NT	<0.1	6.4	12	68	NT	NT	NT	NT	NT	NT	NT	NT	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
BD2012/2	0.1 m	20.12.22	NT	NT	NT	NT	<0.1	0.5	0.7	4.6	NT	NT	NT	NT	NT	NT	NT	NT	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP32S-1/0.1	0.1 m	20.12.22	-	-	-	-	<0.1	1.3	2.1	12	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP32W-1/0.1	0.1 m	20.12.22	<25	<50	400	<100	<0.1	5.1	9.4	68	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP33/0.1	0.1 m	15.12.22	-	-	-	-	<0.1	74	120	580	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP34/0.1	0.1 m	15.12.22	-	-	-	-	<0.1	<0.05	<0.5	<0.05	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP35/0.3	0.3 m	16.12.22	-	-	-	-	<0.1	1.9	2.7	11	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP35N-1/0.1	0.1 m	16.12.22	-	-	-	-	<0.1	2.5	4.5	24	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP35E-1/0.1	0.1 m	19.12.22	-	-	-	-	<0.1	0.3	<0.5	3.1	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP35S-1/0.1	0.1 m	19.12.22	-	-	-	-	<0.1	2.5	4.4	23	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP36/0.1	0 m	15.12.22	-	-	-	-	<0.1	150	230	1500	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP37/0.1	0 m	15.12.22	-	-	-	-	<0.1	1.3	2.2	11	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP38/0.1	0.1 m	16/12/2022	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP38/0.3	0.3 m	16.12.22	-	-	-	-	<0.1	0.99	1.6	7.4	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP38N-1/0.1	0.1 m	16.12.22	-	-	-	-	<0.1	0.1	<0.5	1.9	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP38E-1/0.1	0.1 m	19.12.22	-	-	-	-	<0.1	0.2	<0.5	1.3	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP38S-1/0.1	0.1 m	19.12.22	-	-	-	-	<0.1	0.06	<0.5	0.3	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP38W-1/0.1	0.1 m	19.12.22	<25	<50	<100	<100	<0.1	0.3	0.5	2.8	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	
PP39/0.1	0 m	15.12.22	-	-	-	-	<0.1	13	24	140	-	-	-	-	-	-	-	-	-
			- -	- 120	- 1300	- 5600	5 170	- 0.7	3 -	300 -	- -	1 -	- -	- -	- -	- -	- -	- -	

Lab result
HIL/HSL value EIL/ESL value

HIL/HSL exceedance EIL/ESL exceedance HIL/HSL and EIL/ESL exceedance ML exceedance ML and HIL/HSL or EIL/ESL exceedance

Indicates that asbestos has been detected by the lab, refer to the lab report **Blue** = DC exceedance HSL 0-<1 Exceedance

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

HIL = Health investigation level HSL = Health screening level (excluding DC) EIL = Ecological investigation level ESL = Ecological screening level ML = Management Limit DC = Direct Contact HSL

Notes:

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

b Reported naphthalene laboratory result obtained from BTEXN suite

c Criteria applies to DDT only

Site Assessment Criteria (SAC):

Refer to the SAC section of report for information of SAC sources and rationale. Summary information as follows:

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

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

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

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

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

ML R/P/POS Residential, Parkland and Public Open Space (NEPC, 2013)

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CERTIFICATE OF ANALYSIS 313387

Client Details

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Address	18 Waler Crescent, Smeaton Grange, NSW, 2567

Sample Details

Your Reference	**86548.14, Badgerys Creek**
Number of Samples	103 Soil
Date samples received	16/12/2000
Date completed instructions received	16/12/2022

Analysis Details

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

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

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

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

Report Details

Date results requested by	03/01/2023
Date of Issue	04/01/2023

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Results Approved By
Josh Williams, Organics and LC Supervisor
Kyle Gavrily, Senior Chemist

Authorised By

Nancy Zhang, Laboratory Manager

TRH in Soil (C6-C9) NEPM						
Our Reference		313387-1	313387-9	313387-25	313387-26	313387-44
Your Reference	UNITS	PP1/0.1	PP11/0.1	PP49/0.1	PP51/0.1	PP71/0.1
Date Sampled		14.12.22	14.12.22	15.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	21/12/2022	21/12/2022	21/12/2022	21/12/2022	21/12/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
Surrogate aaa-Trifluorotoluene	%	83	94	86	83	84

TRH in Soil (C6-C9) NEPM					
Our Reference		313387-59	313387-95	313387-101	313387-103
Your Reference	UNITS	PP52-W1/0.1	PP10-W1/0.1	BD3	BD5
Date Sampled		14.12.22	15.12.22	14.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	21/12/2022	21/12/2022	21/12/2022	21/12/2022
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25
Surrogate aaa-Trifluorotoluene	%	83	86	93	82

svTRH (C10-C40) in Soil						
Our Reference		313387-1	313387-9	313387-25	313387-26	313387-44
Your Reference	UNITS	PP1/0.1	PP11/0.1	PP49/0.1	PP51/0.1	PP71/0.1
Date Sampled		14.12.22	14.12.22	15.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	23/12/2022	22/12/2022	23/12/2022	23/12/2022	23/12/2022
TRH C_{10} - C_{14}	mg/kg	63	<50	95	<50	97
TRH C_{15} - C_{28}	mg/kg	3,100	<100	2,300	410	2,200
TRH C_{29} - C_{36}	mg/kg	910	130	1,700	430	1,600
Total +ve TRH (C10-C36)	mg/kg	4,000	130	4,100	840	4,000
TRH >C_{10} -C_{16}	mg/kg	110	<50	150	<50	160
TRH >C_{16} -C_{34}	mg/kg	3,800	180	3,800	780	3,700
TRH >C_{34} -C_{40}	mg/kg	450	<100	630	190	570
Total +ve TRH (>C10-C40)	mg/kg	4,400	180	4,500	970	4,400
Surrogate o-Terphenyl	%	#	80	111	82	113

svTRH (C10-C40) in Soil					
Our Reference		313387-59	313387-95	313387-101	313387-103
Your Reference	UNITS	PP52-W1/0.1	PP10-W1/0.1	BD3	BD5
Date Sampled		14.12.22	15.12.22	14.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	190	<100	140	<100
Total +ve TRH (C10-C36)	mg/kg	190	<50	140	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	230	140	190	110
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	230	140	190	110
Surrogate o-Terphenyl	%	78	75	76	75

PAHs in Soil						
Our Reference		313387-1	313387-2	313387-3	313387-4	313387-5
Your Reference	UNITS	PP1/0.1	PP2/0.1	PP3/0.1	PP4/0.1	PP5/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	2.6	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.9	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.8	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	9.7	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	5.4	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	48	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	49	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	41	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	28	0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	72	0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	28	0.08	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	14	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	3.4	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	13	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	320	0.74	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	45	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	45	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	45	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	77	105	110	108	106

PAHs in Soil						
Our Reference		313387-6	313387-7	313387-8	313387-9	313387-10
Your Reference	UNITS	PP7/0.1	PP8/0.1	PP9/0.1	PP11/0.1	PP12/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	6.6
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.9
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	7.3
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.2	9.4
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.2	9.0
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	34
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.2	52
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.3	150
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.2	40
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.1	16
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	12
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.1	17
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	1.6	350
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	73
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	73
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	73
Surrogate p-Terphenyl-d14	%	107	104	106	106	125

PAHs in Soil						
Our Reference		313387-11	313387-12	313387-13	313387-14	313387-15
Your Reference	UNITS	PP13/0.1	PP14/0.1	PP31/0.1	PP33/0.1	PP34/0.1
Date Sampled		14.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.3	5.9	1.1	3.7	<0.1
Acenaphthene	mg/kg	<0.1	0.6	<0.1	0.3	<0.1
Fluorene	mg/kg	<0.1	1.0	<0.1	0.6	<0.1
Phenanthrene	mg/kg	<0.1	1.9	0.2	0.6	<0.1
Anthracene	mg/kg	0.2	6.3	1.1	4.3	<0.1
Fluoranthene	mg/kg	<0.1	25	3.4	20	<0.1
Pyrene	mg/kg	<0.1	26	5.6	36	<0.1
Benzo(a)anthracene	mg/kg	0.2	13	8.9	40	<0.1
Chrysene	mg/kg	0.1	15	7.5	73	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.6	17	43	240	<0.2
Benzo(a)pyrene	mg/kg	0.5	14	11	74	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	6.6	5.8	43	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.1	3.2	2.5	9.4	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4	7.9	4.8	35	<0.1
Total +ve PAH's	mg/kg	2.8	140	96	580	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.7	21	20	120	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.7	21	20	120	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.7	21	20	120	<0.5
Surrogate p-Terphenyl-d14	%	114	#	118	118	111

PAHs in Soil						
Our Reference		313387-16	313387-17	313387-18	313387-19	313387-20
Your Reference	UNITS	PP36/0.1	PP37/0.1	PP39/0.1	PP40/0.1	PP41/0.1
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	8.9	0.3	1.3	3.8	<0.1
Acenaphthene	mg/kg	0.8	<0.1	<0.1	0.6	<0.1
Fluorene	mg/kg	1.4	<0.1	0.2	0.7	<0.1
Phenanthrene	mg/kg	6.0	<0.1	0.8	1.1	<0.1
Anthracene	mg/kg	22	0.1	1.6	5.1	<0.1
Fluoranthene	mg/kg	99	0.5	11	38	<0.1
Pyrene	mg/kg	140	0.8	13	52	<0.1
Benzo(a)anthracene	mg/kg	190	1.4	13	56	0.1
Chrysene	mg/kg	230	1.1	20	66	0.1
Benzo(b,j+k)fluoranthene	mg/kg	480	3.8	54	210	0.4
Benzo(a)pyrene	mg/kg	150	1.3	13	59	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	68	0.8	7.6	31	<0.1
Dibenzo(a,h)anthracene	mg/kg	6.8	0.3	3.2	11	<0.1
Benzo(g,h,i)perylene	mg/kg	60	0.6	5.9	14	<0.1
Total +ve PAH's	mg/kg	1,500	11	140	550	0.78
Benzo(a)pyrene TEQ calc (zero)	mg/kg	230	2.2	24	100	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	230	2.2	24	100	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	230	2.2	24	100	<0.5
Surrogate p-Terphenyl-d14	%	#	114	114	#	111

PAHs in Soil						
Our Reference		313387-21	313387-22	313387-23	313387-24	313387-25
Your Reference	UNITS	PP43/0.1	PP45/0.1	PP46/0.1	PP47/0.1	PP49/0.1
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	1.9	0.2	<0.1
Acenaphthylene	mg/kg	<0.1	0.3	8.4	4.1	6.5
Acenaphthene	mg/kg	<0.1	<0.1	3.2	1	0.9
Fluorene	mg/kg	<0.1	<0.1	0.8	0.9	1.1
Phenanthrene	mg/kg	<0.1	<0.1	8.6	2.0	1.2
Anthracene	mg/kg	<0.1	0.3	22	5.3	7.7
Fluoranthene	mg/kg	<0.1	0.4	150	43	39
Pyrene	mg/kg	<0.1	0.7	180	62	63
Benzo(a)anthracene	mg/kg	<0.1	1.6	140	73	92
Chrysene	mg/kg	<0.1	1.5	140	68	88
Benzo(b,j+k)fluoranthene	mg/kg	0.3	7.6	390	200	230
Benzo(a)pyrene	mg/kg	0.06	2.4	120	65	93
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	2.0	74	28	41
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.8	31	7.4	16
Benzo(g,h,i)perylene	mg/kg	<0.1	1.6	69	23	36
Total +ve PAH's	mg/kg	0.4	19	1,400	580	720
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	4.3	220	100	150
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	4.3	220	100	150
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	4.3	220	100	150
Surrogate p-Terphenyl-d14	%	108	109	126	118	122

PAHs in Soil						
Our Reference		313387-26	313387-27	313387-28	313387-29	313387-30
Your Reference	UNITS	PP51/0.1	PP53/0.1	PP54/0.1	PP56/0.1	PP57/0.1
Date Sampled		14.12.22	14.12.22	15.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	1.1	<0.1	0.2	<0.1	0.1
Acenaphthene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	0.1	<0.1	<0.1
Anthracene	mg/kg	1.5	<0.1	<0.1	<0.1	0.1
Fluoranthene	mg/kg	5.0	<0.1	0.2	<0.1	0.4
Pyrene	mg/kg	7.1	<0.1	0.2	<0.1	0.9
Benzo(a)anthracene	mg/kg	7.7	<0.1	0.2	<0.1	0.8
Chrysene	mg/kg	14	<0.1	0.2	<0.1	1
Benzo(b,j+k)fluoranthene	mg/kg	50	<0.2	0.3	<0.2	2.4
Benzo(a)pyrene	mg/kg	19	<0.05	0.2	<0.05	1.0
Indeno(1,2,3-c,d)pyrene	mg/kg	6.8	<0.1	0.1	<0.1	0.4
Dibenzo(a,h)anthracene	mg/kg	2.3	<0.1	<0.1	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	6.8	<0.1	0.1	<0.1	0.4
Total +ve PAH's	mg/kg	120	<0.05	1.8	<0.05	7.6
Benzo(a)pyrene TEQ calc (zero)	mg/kg	28	<0.5	<0.5	<0.5	1.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	28	<0.5	<0.5	<0.5	1.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	28	<0.5	<0.5	<0.5	1.5
Surrogate p-Terphenyl-d14	%	80	105	105	104	106

PAHs in Soil						
Our Reference		313387-31	313387-32	313387-33	313387-34	313387-35
Your Reference	UNITS	PP58/0.1	PP59/0.1	PP60/0.1	PP61/0.1	PP62/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	31/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Acenaphthylene	mg/kg	<0.1	0.1	<0.1	0.2	7.5
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.6
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.8
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.6
Anthracene	mg/kg	<0.1	0.1	<0.1	0.3	9.3
Fluoranthene	mg/kg	<0.1	0.3	0.2	0.6	64
Pyrene	mg/kg	<0.1	0.3	0.3	1	84
Benzo(a)anthracene	mg/kg	<0.1	0.4	0.4	1.3	97
Chrysene	mg/kg	<0.1	0.3	0.3	1.0	91
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	1	0.8	2.8	230
Benzo(a)pyrene	mg/kg	<0.05	0.4	0.5	1.2	94
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	0.2	0.6	38
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	0.2	16
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2	0.3	0.5	32
Total +ve PAH's	mg/kg	<0.05	3.8	2.9	9.7	770
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.6	0.6	1.9	150
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.6	0.7	1.9	150
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.7	0.7	1.9	150
Surrogate p-Terphenyl-d14	%	123	108	105	105	122

PAHs in Soil						
Our Reference		313387-36	313387-37	313387-38	313387-39	313387-40
Your Reference	UNITS	PP63/0.1	PP64/0.1	PP65/0.1	PP66/0.1	PP67/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	0.1	<0.1	0.4
Acenaphthylene	mg/kg	4.8	3.1	8.4	4.1	20
Acenaphthene	mg/kg	0.5	0.3	1.6	0.6	3.5
Fluorene	mg/kg	0.8	0.5	1.5	0.8	3.2
Phenanthrene	mg/kg	0.8	0.5	2.6	0.5	31
Anthracene	mg/kg	5.0	3.2	10	3.9	61
Fluoranthene	mg/kg	97	9.5	86	16	560
Pyrene	mg/kg	96	24	130	35	660
Benzo(a)anthracene	mg/kg	98	28	130	28	540
Chrysene	mg/kg	95	46	130	49	640
Benzo(b,j+k)fluoranthene	mg/kg	220	97	290	140	1,200
Benzo(a)pyrene	mg/kg	73	34	110	52	410
Indeno(1,2,3-c,d)pyrene	mg/kg	31	9.2	42	19	150
Dibenzo(a,h)anthracene	mg/kg	11	3.6	6.7	5.3	41
Benzo(g,h,i)perylene	mg/kg	25	8.4	33	10	130
Total +ve PAH's	mg/kg	760	270	970	360	4,400
Benzo(a)pyrene TEQ calc (zero)	mg/kg	120	52	170	77	650
Benzo(a)pyrene TEQ calc(half)	mg/kg	120	52	170	77	650
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	120	52	170	77	650
Surrogate p-Terphenyl-d14	%	106	121	118	115	129

PAHs in Soil						
Our Reference		313387-41	313387-42	313387-43	313387-44	313387-46
Your Reference	UNITS	PP68/0.1	PP69/0.1	PP70/0.1	PP71/0.1	PP52/0.3
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	31/12/2022	31/12/2022	31/12/2022	31/12/2022	22/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.8	<0.1	0.9	2.8	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Fluorene	mg/kg	0.2	<0.1	0.2	0.4	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.4	0.7	<0.1
Anthracene	mg/kg	0.6	<0.1	0.6	2.4	<0.1
Fluoranthene	mg/kg	0.7	<0.1	3.4	16	<0.1
Pyrene	mg/kg	2.6	<0.1	3.3	46	<0.1
Benzo(a)anthracene	mg/kg	2.6	<0.1	3.3	40	<0.1
Chrysene	mg/kg	3.1	<0.1	3.5	64	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	14	<0.2	8.4	120	<0.2
Benzo(a)pyrene	mg/kg	3.9	<0.05	4.2	52	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	2.0	<0.1	1.8	16	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.6	<0.1	0.6	7.5	<0.1
Benzo(g,h,i)perylene	mg/kg	1.7	<0.1	1.7	19	<0.1
Total +ve PAH's	mg/kg	32	<0.05	32	390	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	6.4	<0.5	6.2	78	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	6.4	<0.5	6.2	78	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	6.4	<0.5	6.2	78	<0.5
Surrogate p-Terphenyl-d14	%	129	127	131	86	85

PAHs in Soil						
Our Reference		313387-47	313387-51	313387-55	313387-59	313387-64
Your Reference	UNITS	PP52-N1/0.1	PP52-E1/0.1	PP52-S1/0.1	PP52-W1/0.1	PP6/0.3
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	31/12/2022	31/12/2022	31/12/2022	31/12/2022	31/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	128	62	124	121	127

PAHs in Soil						
Our Reference		313387-65	313387-69	313387-73	313387-77	313387-82
Your Reference	UNITS	PP6-N1/0.1	PP6-E1/0.1	PP6-S1/0.1	PP6-W1/0.1	PP10/0.3
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	31/12/2022	31/12/2022	31/12/2022	31/12/2022	31/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	130	126	130	135	126

PAHs in Soil						
Our Reference		313387-83	313387-87	313387-91	313387-95	313387-99
Your Reference	UNITS	PP10-N1/0.1	PP10-E1/0.1	PP10-S1/0.1	PP10-W1/0.1	BD1
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	31/12/2022	31/12/2022	31/12/2022	31/12/2022	31/12/2022
Naphthalene	mg/kg	<0.1	<0.1	0.1	<0.1	0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	2.6
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluorene	mg/kg	<0.1	<0.1	0.1	<0.1	0.6
Phenanthrene	mg/kg	<0.1	<0.1	1.2	0.1	0.5
Anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	1.3
Fluoranthene	mg/kg	<0.1	<0.1	0.2	<0.1	2.9
Pyrene	mg/kg	<0.1	<0.1	0.2	<0.1	5.4
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.6	<0.1	5.3
Chrysene	mg/kg	<0.1	<0.1	0.4	<0.1	6.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.2	<0.2	20
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.1	<0.05	8.4
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	4.0
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	1.4
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	3.6
Total +ve PAH's	mg/kg	<0.05	<0.05	3.1	0.1	62
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	13
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	13
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	13
Surrogate p-Terphenyl-d14	%	125	123	131	133	133

PAHs in Soil					
Our Reference		313387-100	313387-101	313387-102	313387-103
Your Reference	UNITS	BD2	BD3	BD4	BD5
Date Sampled		14.12.22	14.12.22	14.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	31/12/2022	31/12/2022	31/12/2022	31/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.2	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.4	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.3	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.4	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	1	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.60	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.4	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	4.1	<0.05	<0.05	0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.9	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.9	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	129	140	133	130

PCBs in Soil				
Our Reference		313387-1	313387-26	313387-46
Your Reference	UNITS	PP1/0.1	PP51/0.1	PP52/0.3
Date Sampled		14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil
Date extracted	-	20/12/2022	20/12/2022	20/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	108	105	92

Moisture						
Our Reference		313387-1	313387-2	313387-3	313387-4	313387-5
Your Reference	UNITS	PP1/0.1	PP2/0.1	PP3/0.1	PP4/0.1	PP5/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	9.3	12	8.5	5.9	15

Moisture						
Our Reference		313387-6	313387-7	313387-8	313387-9	313387-10
Your Reference	UNITS	PP7/0.1	PP8/0.1	PP9/0.1	PP11/0.1	PP12/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	10	14	11	10	13

Moisture						
Our Reference		313387-11	313387-12	313387-13	313387-14	313387-15
Your Reference	UNITS	PP13/0.1	PP14/0.1	PP31/0.1	PP33/0.1	PP34/0.1
Date Sampled		14.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	11	9.4	12	23	14

Moisture						
Our Reference		313387-16	313387-17	313387-18	313387-19	313387-20
Your Reference	UNITS	PP36/0.1	PP37/0.1	PP39/0.1	PP40/0.1	PP41/0.1
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	7.7	5.5	16	7.1	19

Moisture						
Our Reference		313387-21	313387-22	313387-23	313387-24	313387-25
Your Reference	UNITS	PP43/0.1	PP45/0.1	PP46/0.1	PP47/0.1	PP49/0.1
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	7.2	10	7.1	7.0	9.1

Moisture						
Our Reference		313387-26	313387-27	313387-28	313387-29	313387-30
Your Reference	UNITS	PP51/0.1	PP53/0.1	PP54/0.1	PP56/0.1	PP57/0.1
Date Sampled		14.12.22	14.12.22	15.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	8.9	1	4.5	13	21

Moisture						
Our Reference		313387-31	313387-32	313387-33	313387-34	313387-35
Your Reference	UNITS	PP58/0.1	PP59/0.1	PP60/0.1	PP61/0.1	PP62/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	12	5.7	29	21	8.9

Moisture						
Our Reference		313387-36	313387-37	313387-38	313387-39	313387-40
Your Reference	UNITS	PP63/0.1	PP64/0.1	PP65/0.1	PP66/0.1	PP67/0.1
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	5.1	5.3	19	24	16

Moisture						
Our Reference		313387-41	313387-42	313387-43	313387-44	313387-46
Your Reference	UNITS	PP68/0.1	PP69/0.1	PP70/0.1	PP71/0.1	PP52/0.3
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	19	11	4.2	13	12

Moisture						
Our Reference		313387-47	313387-51	313387-55	313387-59	313387-64
Your Reference	UNITS	PP52-N1/0.1	PP52-E1/0.1	PP52-S1/0.1	PP52-W1/0.1	PP6/0.3
Date Sampled		14.12.22	14.12.22	14.12.22	14.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	12	13	11	12	14

Moisture						
Our Reference		313387-65	313387-69	313387-73	313387-77	313387-82
Your Reference	UNITS	PP6-N1/0.1	PP6-E1/0.1	PP6-S1/0.1	PP6-W1/0.1	PP10/0.3
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	10	11	11	9.6	14

Moisture						
Our Reference		313387-83	313387-87	313387-91	313387-95	313387-99
Your Reference	UNITS	PP10-N1/0.1	PP10-E1/0.1	PP10-S1/0.1	PP10-W1/0.1	BD1
Date Sampled		15.12.22	15.12.22	15.12.22	15.12.22	14.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	14	13	4.7	8.3	4.2

Moisture					
Our Reference		313387-100	313387-101	313387-102	313387-103
Your Reference	UNITS	BD2	BD3	BD4	BD5
Date Sampled		14.12.22	14.12.22	14.12.22	15.12.22
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	19/12/2022	19/12/2022	19/12/2022	19/12/2022
Date analysed	-	20/12/2022	20/12/2022	20/12/2022	20/12/2022
Moisture	%	30	18	8.4	9.7

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: TRH in Soil (C6-C9) NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-23	313387-9
Date extracted	-			19/12/2022	1	19/12/2022	19/12/2022		19/12/2022	19/12/2022
Date analysed	-			21/12/2022	1	21/12/2022	21/12/2022		21/12/2022	21/12/2022
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	111	120
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	111	120
Surrogate aaa-Trifluorotoluene	%		Org-023	82	1	83	74	11	96	92

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-23	313387-9
Date extracted	-			19/12/2022	1	19/12/2022	19/12/2022		19/12/2022	19/12/2022
Date analysed	-			22/12/2022	1	23/12/2022	23/12/2022		22/12/2022	22/12/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	63	65	3	80	84
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	3100	3000	3	90	82
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	910	910	0	95	95
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	110	100	10	80	84
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	3800	3800	0	90	82
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	450	420	7	95	95
Surrogate o-Terphenyl	%		Org-020	76	1	#	#		71	80

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-23	313387-9
Date extracted	-			19/12/2022	1	19/12/2022	19/12/2022		19/12/2022	19/12/2022
Date analysed	-			22/12/2022	1	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	99
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	2.6	2.6	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	0.9	0.6	40	89	95
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	0.8	0.6	29	92	99
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	9.7	8.7	11	104	116
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	5.4	4.2	25	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	48	32	40	96	102
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	49	37	28	101	109
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	41	38	8	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	28	36	25	83	75
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	72	82	13	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	28	32	13	128	124
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	14	15	7	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	3.4	3.2	6	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	13	14	7	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	120	1	77	73	5	101	111

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-24	313387-24
Date extracted	-			[NT]	13	19/12/2022	19/12/2022		19/12/2022	19/12/2022
Date analysed	-			[NT]	13	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	<0.1	0	92	103
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	13	1.1	1.5	31	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	0.1	0	89	111
Fluorene	mg/kg	0.1	Org-022/025	[NT]	13	<0.1	0.2	67	95	111
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	13	0.2	0.2	0	104	#
Anthracene	mg/kg	0.1	Org-022/025	[NT]	13	1.1	1.7	43	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	13	3.4	7.5	75	98	#
Pyrene	mg/kg	0.1	Org-022/025	[NT]	13	5.6	10	56	103	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	13	8.9	13	37	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	13	7.5	28	115	79	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	13	43	84	65	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	13	11	23	71	126	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	13	5.8	7.6	27	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	13	2.5	2.4	4	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	13	4.8	6.4	29	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	13	118	117	1	106	126

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-25	313387-46
Date extracted	-			[NT]	23	19/12/2022	19/12/2022		19/12/2022	19/12/2022
Date analysed	-			[NT]	23	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	23	1.9	1.7	11	96	111
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	23	8.4	8.0	5	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	23	3.2	3.0	6	90	104
Fluorene	mg/kg	0.1	Org-022/025	[NT]	23	0.8	1.2	40	99	106
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	23	8.6	6.6	26	109	112
Anthracene	mg/kg	0.1	Org-022/025	[NT]	23	22	21	5	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	23	150	110	31	102	118
Pyrene	mg/kg	0.1	Org-022/025	[NT]	23	180	140	25	98	119
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	23	140	110	24	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	23	140	100	33	81	88
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	23	390	330	17	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	23	120	110	9	88	99
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	23	74	64	14	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	23	31	30	3	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	23	69	55	23	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	23	126	119	6	96	98

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-26	313387-102
Date extracted	-			[NT]	43	19/12/2022	19/12/2022		20/12/2022	19/12/2022
Date analysed	-			[NT]	43	31/12/2022	31/12/2022		22/12/2022	31/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	43	<0.1	0.1	0	99	107
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	43	0.9	1.1	20	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	43	<0.1	<0.1	0	103	103
Fluorene	mg/kg	0.1	Org-022/025	[NT]	43	0.2	0.2	0	95	118
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	43	0.4	0.5	22	98	122
Anthracene	mg/kg	0.1	Org-022/025	[NT]	43	0.6	0.7	15	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	43	3.4	2.4	34	94	116
Pyrene	mg/kg	0.1	Org-022/025	[NT]	43	3.3	3.1	6	93	123
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	43	3.3	3.4	3	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	43	3.5	3.5	0	75	71
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	43	8.4	11	27	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	43	4.2	5.2	21	94	88
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	43	1.8	2.2	20	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	43	0.6	0.4	40	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	43	1.7	2.0	16	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	43	131	136	4	83	125

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	73	19/12/2022	19/12/2022		[NT]	[NT]
Date analysed	-			[NT]	73	31/12/2022	31/12/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	73	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	73	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	73	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	73	130	131	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	100	19/12/2022	19/12/2022		[NT]	[NT]
Date analysed	-			[NT]	100	31/12/2022	31/12/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	100	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	100	0.2	0.2	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	100	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	100	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	100	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	100	<0.1	0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	100	0.2	0.2	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	100	0.4	0.4	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	100	0.3	0.4	29	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	100	0.4	0.4	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	100	1	1	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	100	0.60	0.62	3	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	100	0.3	0.3	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	100	0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	100	0.4	0.4	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	100	129	131	2	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-26	313387-46
Date extracted	-			20/12/2022	[NT]	[NT]	[NT]	[NT]	20/12/2022	20/12/2022
Date analysed	-			31/12/2022	[NT]	[NT]	[NT]	[NT]	22/12/2022	22/12/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	120	88
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	89	[NT]	[NT]	[NT]	[NT]	96	101

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

TRH Soil C10-C40 NEPM - # Percent recovery for the surrogate is not possible to report as the high concentration of analytes in sample 313387-1,1d have caused interference.

PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of samples 313387-13/13d.
PAHs in Soil - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample 313387-24ms have caused interference.

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 86548.14	**Suburb:** Badgerys Creek		**To:** Envirolab Services
Project Manager: GAR	**Order Number:**	**Sampler:** AJ/SCG	12 Ashley Street, Chatswood NSW 2067
Email Grant.Russell@douglaspartners.com.au; Ashika.Jagdish@douglaspartners.com.au			**Attn:** Nancy Zhang
Turnaround time: ☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			(02) 9910 6200
Prior Storage: ☑ Fridge ☐ Freezer ☐ Esky ☐ Shelf	**Do samples contain 'potential' HBM?** ☑ No ☐ Yes		(If YES, then handle, transport and store in accordance with FPM HAZID)

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M - Material	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
1	PP1/0.1			14.12.22	S	G	x	x	x								
2	PP2/0.1			14.12.22	S	G	x										
3	PP3/0.1			14.12.22	S	G	x										
4	PP4/0.1			14.12.22	S	G	x										
5	PP5/0.1			14.12.22	S	G	x										
6	PP7/0.1			14.12.22	S	G	x										
7	PP8/0.1			14.12.22	S	G	x										
8	PP9/0.1			14.12.22	S	G	x										
9	PP11/0.1			14.12.22	S	G	x		x								
10	PP12/0.1			14.12.22	S	G	x										
11	PP13/0.1			14.12.22	S	G	x										
12	PP14/0.1			15.12.22	S	G	x										
13	PP31/0.1			15.12.22	S	G	x										
14	PP33/0.1			15.12.22	S	G	x										

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 313387
Received: 16-12-22 1730
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Metals to analyse:			**LAB RECEIPT** Els 54d
Number of samples in container: 7	**Transported to laboratory by:**		**Lab Ref. No:**
Send results to: Douglas Partners Pty Ltd			**Received by:** 1730
Address: 18 Waler Crescent, Smeaton Grange	**Phone:** (02) 4647 0075		**Date & Time:** 16/12
Relinquished by: AJ	**Date:** 16.12.22	**Signed:**	**Signed:**

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:**	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
15	PP34/0.1			15.12.22	S	G	x										
16	PP36/0.1			15.12.22	S	G	x										
17	PP37/0.1			15.12.22	S	G	x										
18	PP39/0.1			15.12.22	S	G	x										
19	PP40/0.1			15.12.22	S	G	x										
20	PP41/0.1			15.12.22	S	G	x										
21	PP43/0.1			15.12.22	S	G	x										313387 16.12.22 CM
22	PP45/0.1			15.12.22	S	G	x										
23	PP46/0.1			15.12.22	S	G	x										
24	PP47/0.1			15.12.22	S	G	x										
25	PP49/0.1			15.12.22	S	G	x		x								
26	PP51/0.1			14.12.22	S	G	x	x	x								
27	PP53/0.1			14.12.22	S	G	x										
28	PP54/0.1			15.12.22	S	G	x										
29	PP56/0.1			14.12.22	S	G	x										
30	PP57/0.1			14.12.22	S	G	x										
31	PP58/0.1			14.12.22	S	G	x										
32	PP59/0.1			14.12.22	S	G	x										

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water M -	G - glass P - plastic	PAH	PCBs	TRH							ON HOLD	
33	PP60/0.1			14.12.22	S	G	x										
34	PP61/0.1			14.12.22	S	G	x										
35	PP62/0.1			14.12.22	S	G	x										
36	PP63/0.1			14.12.22	S	G	x										
37	PP64/0.1			14.12.22	S	G	x										
38	PP65/0.1			14.12.22	S	G	x										
39	PP66/0.1			14.12.22	S	G	x										
40	PP67/0.1			14.12.22	S	G	x										
41	PP68/0.1			14.12.22	S	G	x										#373387 CM 16.12.22
42	PP69/0.1			14.12.22	S	G	x										
43	PP70/0.1			14.12.22	S	G	x										
44	PP71/0.1			14.12.22	S	G	x		x								
45	PP52/0.1			14.12.22	S	G										x	
46	PP52/0.3			14.12.22	S	G	x	x									
47	PP52-N1/0.1			14.12.22	S	G	x										
48	PP52-N1/0.3			14.12.22	S	G										x	
49	PP52-N1.5/0.1			14.12.22	S	G										x	
50	PP52-N1.5/0.3			14.12.22	S	G										x	
51	PP52-E1/0.1			14.12.22	S	G	x										

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
52	PP52E1/0.3			14.12.22	S	G										x	
53	PP52-E1.5/0.1			14.12.22	S	G										x	
54	PP52-E1.5/0.3			14.12.22	S	G										x	
55	PP52-S1/0.1			14.12.22	S	G	x										
56	PP52-S1/0.3			14.12.22	S	G										x	
57	PP52-S1.5/0.1			14.12.22	S	G										x	
58	PP52-S1.5/0.3			14.12.22	S	G										x	
59	PP52-W1/0.1			14.12.22	S	G	x		x								
60	PP52-W1/0.3			14.12.22	S	G										x	
61	PP52-W1.5/0.1			14.12.22	S	G										x	
62	PP52-W1.5/0.3			14.12.22	S	G										x	
63	PP6/0.1			15.12.22	S	G										x	
64	PP6/0.3			15.12.22	S	G	x										
65	PP6-N1/0.1			15.12.22	S	G	x										
66	PP6-N1/0.3			15.12.22	S	G										x	#313387
67	PP6-N1.5/0.1			15.12.22	S	G										x	CM
68	PP6-N1.5/0.3			15.12.22	S	G										x	16.12.22
69	PP6-E1/0.1			15.12.22	S	G	x										
70	PP6-E1/0.3			15.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water M -	G - glass P - plastic	PAH	PCBs	TRH							ON HOLD	
71	PP6-E1.5/0.1			15.12.22	S	G										x	
72	PP6-E1.5/0.3			15.12.22	S	G										x	
73	PP6-S1/0.1			15.12.22	S	G	x										
74	PP6-S1/0.3			15.12.22	S	G										x	
75	PP6-S1.5/0.1			15.12.22	S	G										x	
76	PP6-S1.5/0.3			15.12.22	S	G										x	
77	PP6-W1/0.1			15.12.22	S	G	x										
78	PP6-W1/0.3			15.12.22	S	G										x	
79	PP6-W1.5/0.1			15.12.22	S	G										x	
80	PP6-W1.5/0.3			15.12.22	S	G										x	
81	PP10/0.1			15.12.22	S	G										x	# 313387 CM 16-12-21
82	PP10/0.3			15.12.22	S	G	x										
83	PP10-N1/0.1			15.12.22	S	G	x										
84	PP10-N1/0.3			15.12.22	S	G										x	
85	PP10-N1.5/0.1			15.12.22	S	G										x	
86	PP10-N1.5/0.3			15.12.22	S	G										x	
87	PP10-E1/0.1			15.12.22	S	G	x										
88	PP10-E1/0.3			15.12.22	S	G										x	
89	PP10-E1.5/0.1			15.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services	
Project Manager: GAR		**Dispatch date:** 16.12.22	

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
90	PP10-E1.5/0.3			15.12.22	S	G										x	
91	PP10-S1/0.1			15.12.22	S	G	x										
92	PP10-S1/0.3			15.12.22	S	G										x	
93	PP10-S1.5/0.1			15.12.22	S	G										x	
94	PP10-S1.5/0.3			15.12.22	S	G										x	
95	PP10-W1/0.1			15.12.22	S	G	x		x								
96	PP10-W1/0.3			15.12.22	S	G										x	
97	PP10-W1.5/0.1			15.12.22	S	G										x	
98	PP10-W1.5/0.3			15.12.22	S	G										x	
99	BD1			14.12.22	S	G	x										
100	BD2			14.12.22	S	G	x										
101	BD3			14.12.22	S	G	x		x								
102	BD4			14.12.22	S	G	x										
103	BD5			15.12.22	S	G	x		x								
																	#313307 CM 16.12.22

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd Smeaton Grange
Attention	Ashika Jagdish, Grant Russell

Sample Login Details

Your reference	86548.14, Badgerys Creek
Envirolab Reference	313387
Date Sample Received	16/12/2000
Date Instructions Received	16/12/2022
Date Results Expected to be Reported	03/01/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	103 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	14
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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

Analysis Underway, details on the following page:

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	On Hold
PP1/0.1	✓	✓	✓	✓	
PP2/0.1			✓		
PP3/0.1			✓		
PP4/0.1			✓		
PP5/0.1			✓		
PP7/0.1			✓		
PP8/0.1			✓		
PP9/0.1			✓		
PP11/0.1	✓	✓	✓		
PP12/0.1			✓		
PP13/0.1			✓		
PP14/0.1			✓		
PP31/0.1			✓		
PP33/0.1			✓		
PP34/0.1			✓		
PP36/0.1			✓		
PP37/0.1			✓		
PP39/0.1			✓		
PP40/0.1			✓		
PP41/0.1			✓		
PP43/0.1			✓		
PP45/0.1			✓		
PP46/0.1			✓		
PP47/0.1			✓		
PP49/0.1	✓	✓	✓		
PP51/0.1	✓	✓	✓	✓	
PP53/0.1			✓		
PP54/0.1			✓		
PP56/0.1			✓		
PP57/0.1			✓		
PP58/0.1			✓		
PP59/0.1			✓		

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	On Hold
PP60/0.1			✓		
PP61/0.1			✓		
PP62/0.1			✓		
PP63/0.1			✓		
PP64/0.1			✓		
PP65/0.1			✓		
PP66/0.1			✓		
PP67/0.1			✓		
PP68/0.1			✓		
PP69/0.1			✓		
PP70/0.1			✓		
PP71/0.1	✓	✓	✓		
PP52/0.1					✓
PP52/0.3			✓	✓	
PP52-N1/0.1			✓		
PP52-N1/0.3					✓
PP52-N1.5/0.1					✓
PP52-N1.5/0.3					✓
PP52-E1/0.1			✓		
PP52E1/0.3					✓
PP52-E1.5/0.1					✓
PP52-E1.5/0.3					✓
PP52-S1/0.1			✓		
PP52-S1/0.3					✓
PP52-S1.5/0.1					✓
PP52-S1.5/0.3					✓
PP52-W1/0.1	✓	✓	✓		
PP52-W1/0.3					✓
PP52-W1.5/0.1					✓
PP52-W1.5/0.3					✓
PP6/0.1					✓
PP6/0.3			✓		

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	On Hold
PP6-N1/0.1			✓		
PP6-N1/0.3					✓
PP6-N1.5/0.1					✓
PP6-N1.5/0.3					✓
PP6-E1/0.1			✓		
PP6-E1/0.3					✓
PP6-E1.5/0.1					✓
PP6-E1.5/0.3					✓
PP6-S1/0.1			✓		
PP6-S1/0.3					✓
PP6-S1.5/0.1					✓
PP6-S1.5/0.3					✓
PP6-W1/0.1			✓		
PP6-W1/0.3					✓
PP6-W1.5/0.1					✓
PP6-W1.5/0.3					✓
PP10/0.1					✓
PP10/0.3			✓		
PP10-N1/0.1			✓		
PP10-N1/0.3					✓
PP10-N1.5/0.1					✓
PP10-N1.5/0.3					✓
PP10-E1/0.1			✓		
PP10-E1/0.3					✓
PP10-E1.5/0.1					✓
PP10-E1.5/0.3					✓
PP10-S1/0.1			✓		
PP10-S1/0.3					✓
PP10-S1.5/0.1					✓
PP10-S1.5/0.3					✓
PP10-W1/0.1	✓	✓	✓		
PP10-W1/0.3					✓

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	On Hold
PP10-W1.5/0.1					✓
PP10-W1.5/0.3					✓
BD1			✓		
BD2			✓		
BD3	✓	✓	✓		
BD4			✓		
BD5	✓	✓	✓		

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

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

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CERTIFICATE OF ANALYSIS 313719

Client Details

Client	Douglas Partners Pty Ltd Smeaton Grange
Attention	Ashika Jagdish, Grant Russell
Address	18 Waler Crescent, Smeaton Grange, NSW, 2567

Sample Details

Your Reference	**86548.14, Badgerys Creek**
Number of Samples	162 Soil, 1 Material
Date samples received	21/12/2022
Date completed instructions received	21/12/2022

Analysis Details

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

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

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

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

Report Details

Date results requested by	09/01/2023
Date of Issue	09/01/2023

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

Results Approved By
Josh Williams, Organics and LC Supervisor
Kyle Gavrily, Senior Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

TRH in Soil (C6-C9) NEPM						
Our Reference		313719-16	313719-34	313719-52	313719-84	313719-102
Your Reference	UNITS	PP48W-1/0.1	PP50W-1/0.1	PP55W-1/0.1	PP38W-1/0.1	PP42W-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	19.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	22/12/2022	22/12/2022	22/12/2022	09/01/2023	09/01/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
Surrogate aaa-Trifluorotoluene	%	119	117	88	91	88

TRH in Soil (C6-C9) NEPM						
Our Reference		313719-120	313719-138	313719-156	313719-160	313719-162
Your Reference	UNITS	PP44W-1/0.1	PP32W-1/0.1	PP72W-1/0.1	BD2012/1	BD-6/1612
Date Sampled		19.12.22	20.12.22	20.12.22	20.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	09/01/2023	09/01/2023	09/01/2023	09/01/2023	09/01/2023
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
Surrogate aaa-Trifluorotoluene	%	101	112	109	99	104

svTRH (C10-C40) in Soil						
Our Reference		313719-16	313719-34	313719-52	313719-84	313719-102
Your Reference	UNITS	PP48W-1/0.1	PP50W-1/0.1	PP55W-1/0.1	PP38W-1/0.1	PP42W-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	19.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	23/12/2022	23/12/2022	23/12/2022	23/12/2022	23/12/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{10} -C_{16}	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	100
Surrogate o-Terphenyl	%	81	92	92	91	93

svTRH (C10-C40) in Soil						
Our Reference		313719-120	313719-138	313719-156	313719-160	313719-162
Your Reference	UNITS	PP44W-1/0.1	PP32W-1/0.1	PP72W-1/0.1	BD2012/1	BD-6/1612
Date Sampled		19.12.22	20.12.22	20.12.22	20.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	23/12/2022	23/12/2022	23/12/2022	23/12/2022	23/12/2022
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	230	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	200	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	400	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	400	<50	<50	<50
Surrogate o-Terphenyl	%	83	101	92	93	79

PAHs in Soil						
Our Reference		313719-1	313719-3	313719-4	313719-8	313719-12
Your Reference	UNITS	PP73/0.1	PP48/0.3	PP48N-1/0.1	PP48E-1/0.1	PP48S-1/0.1
Date Sampled		20.12.22	16.12.22	16.12.22	16.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	0.2	<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	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Fluoranthene	mg/kg	0.5	0.8	2.2	0.3	<0.1
Pyrene	mg/kg	0.4	1.1	2.8	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	1.2	3.1	0.3	<0.1
Chrysene	mg/kg	0.4	1.0	3.6	0.3	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	2.9	8.6	0.9	<0.2
Benzo(a)pyrene	mg/kg	<0.05	1.1	2.9	0.3	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.4	1.9	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.2	0.7	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.5	2.0	0.2	<0.1
Total +ve PAH's	mg/kg	1.7	9.1	29	2.9	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.7	5.0	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.7	5.0	0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.7	5.0	0.6	<0.5
Surrogate p-Terphenyl-d14	%	85	109	112	105	94

PAHs in Soil						
Our Reference		313719-16	313719-21	313719-22	313719-26	313719-30
Your Reference	UNITS	PP48W-1/0.1	PP50/0.3	PP50N-1/0.1	PP50E-1/0.1	PP50S-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	16.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.3	0.1	1.8	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	2.0	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	6.6	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Anthracene	mg/kg	<0.1	0.2	<0.1	0.8	<0.1
Fluoranthene	mg/kg	0.9	0.6	0.2	2.0	0.2
Pyrene	mg/kg	1.2	1.2	0.3	2.2	0.1
Benzo(a)anthracene	mg/kg	1.2	1.2	0.5	2.0	0.1
Chrysene	mg/kg	1.1	1.1	0.7	1.5	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	3.8	6.4	2.0	6.9	0.2
Benzo(a)pyrene	mg/kg	1.2	3.0	0.90	4.2	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	0.7	2.0	0.6	5.0	<0.1
Dibenzo(a,h)anthracene	mg/kg	0.3	0.7	0.2	1.5	<0.1
Benzo(g,h,i)perylene	mg/kg	0.7	2.1	0.5	5.8	<0.1
Total +ve PAH's	mg/kg	11	19	6.0	43	0.70
Benzo(a)pyrene TEQ calc (zero)	mg/kg	2.0	4.7	1.4	7.1	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	2.0	4.7	1.4	7.1	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	2.0	4.7	1.4	7.1	<0.5
Surrogate p-Terphenyl-d14	%	106	100	117	113	72

PAHs in Soil						
Our Reference		313719-34	313719-39	313719-40	313719-44	313719-48
Your Reference	UNITS	PP50W-1/0.1	PP55/0.3	PP55N-1/0.1	PP55E-1/0.1	PP55S-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	16.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	1.3	5.7	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.2	0.3	<0.1	<0.1
Fluorene	mg/kg	<0.1	3.0	0.7	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.1	0.4	<0.1	<0.1
Anthracene	mg/kg	<0.1	1.0	6.3	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	4.3	25	<0.1	0.2
Pyrene	mg/kg	<0.1	6.4	34	<0.1	0.4
Benzo(a)anthracene	mg/kg	<0.1	13	58	0.1	0.6
Chrysene	mg/kg	<0.1	8.6	48	0.2	0.6
Benzo(b,j+k)fluoranthene	mg/kg	0.2	35	200	0.6	2.4
Benzo(a)pyrene	mg/kg	0.06	14	53	0.2	0.73
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	5.9	23	<0.1	0.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	2.3	5.2	<0.1	0.2
Benzo(g,h,i)perylene	mg/kg	<0.1	5.2	10	<0.1	0.4
Total +ve PAH's	mg/kg	0.3	99	470	1.0	5.9
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	21	87	<0.5	1.3
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	21	87	<0.5	1.3
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	21	87	<0.5	1.3
Surrogate p-Terphenyl-d14	%	93	118	140	97	100

PAHs in Soil						
Our Reference		313719-52	313719-57	313719-58	313719-62	313719-66
Your Reference	UNITS	PP55W-1/0.1	PP35/0.3	PP35N-1/0.1	PP35E-1/0.1	PP35S-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	19.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.1	0.2	<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	0.2	<0.1	0.2
Fluoranthene	mg/kg	<0.1	0.2	1	0.1	0.9
Pyrene	mg/kg	<0.1	0.8	1.4	0.2	1.3
Benzo(a)anthracene	mg/kg	<0.1	0.4	2.6	0.3	2.9
Chrysene	mg/kg	<0.1	1	3.1	0.4	3.2
Benzo(b,j+k)fluoranthene	mg/kg	0.2	4.1	9.9	2	9.6
Benzo(a)pyrene	mg/kg	0.06	1.9	2.5	0.3	2.5
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	1.0	1.2	0.2	1.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.3	0.5	<0.1	0.5
Benzo(g,h,i)perylene	mg/kg	<0.1	1	1.0	0.2	1.0
Total +ve PAH's	mg/kg	0.3	11	24	3.1	23
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	2.7	4.5	<0.5	4.4
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	2.7	4.5	0.5	4.4
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	2.7	4.5	0.6	4.4
Surrogate p-Terphenyl-d14	%	94	108	107	106	109

PAHs in Soil						
Our Reference		313719-71	313719-72	313719-76	313719-80	313719-84
Your Reference	UNITS	PP38/0.3	PP38N-1/0.1	PP38E-1/0.1	PP38S-1/0.1	PP38W-1/0.1
Date Sampled		16.12.22	16.12.22	19.12.22	19.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	0.2	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.4	0.2	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	0.7	0.1	0.1	<0.1	0.2
Chrysene	mg/kg	0.8	0.2	0.2	<0.1	0.4
Benzo(b,j+k)fluoranthene	mg/kg	3.2	0.8	0.6	0.2	1
Benzo(a)pyrene	mg/kg	0.99	0.1	0.2	0.06	0.3
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	0.2	0.1	<0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.5	0.1	0.1	<0.1	0.2
Total +ve PAH's	mg/kg	7.4	1.9	1.3	0.3	2.8
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.6	<0.5	<0.5	<0.5	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.6	<0.5	<0.5	<0.5	0.6
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.6	<0.5	<0.5	<0.5	0.6
Surrogate p-Terphenyl-d14	%	106	93	94	90	102

PAHs in Soil						
Our Reference		313719-89	313719-90	313719-94	313719-98	313719-102
Your Reference	UNITS	PP42/0.3	PP42N-1/0.1	PP42E-1/0.1	PP42S-1/0.1	PP42W-1/0.1
Date Sampled		16.12.22	16.12.22	19.12.22	19.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
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	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	0.1	<0.1	0.1
Fluoranthene	mg/kg	0.3	<0.1	0.4	<0.1	0.9
Pyrene	mg/kg	0.9	<0.1	0.5	<0.1	1
Benzo(a)anthracene	mg/kg	1	<0.1	0.5	<0.1	1.7
Chrysene	mg/kg	2.3	0.1	0.7	<0.1	3.4
Benzo(b,j+k)fluoranthene	mg/kg	5.7	0.4	2.5	0.4	4.7
Benzo(a)pyrene	mg/kg	1.9	0.1	0.57	0.06	0.86
Indeno(1,2,3-c,d)pyrene	mg/kg	0.8	<0.1	0.4	<0.1	0.4
Dibenzo(a,h)anthracene	mg/kg	0.3	<0.1	0.1	<0.1	0.1
Benzo(g,h,i)perylene	mg/kg	0.9	<0.1	0.4	<0.1	0.6
Total +ve PAH's	mg/kg	14	0.69	6.2	0.4	14
Benzo(a)pyrene TEQ calc (zero)	mg/kg	2.9	<0.5	1.1	<0.5	1.7
Benzo(a)pyrene TEQ calc(half)	mg/kg	2.9	<0.5	1.1	<0.5	1.7
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	2.9	<0.5	1.1	<0.5	1.7
Surrogate p-Terphenyl-d14	%	70	95	98	93	72

PAHs in Soil						
Our Reference		313719-107	313719-108	313719-112	313719-116	313719-120
Your Reference	UNITS	PP44/0.3	PP44N-1/0.1	PP44E-1/0.1	PP44S-1/0.1	PP44W-1/0.1
Date Sampled		16.12.22	16.12.22	19.12.22	19.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	1.3	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	4.4	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.7	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	1.6	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	1.9	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	3.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	11	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	14	<0.1	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	18	<0.1	0.1	<0.1	0.1
Chrysene	mg/kg	36	<0.1	0.1	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	250	0.2	0.2	<0.2	0.6
Benzo(a)pyrene	mg/kg	48	0.06	<0.05	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	22	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	7.3	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	26	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	440	0.3	0.76	<0.05	1.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	85	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	85	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	85	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	10	70	71	67	72

PAHs in Soil						
Our Reference		313719-125	313719-126	313719-130	313719-134	313719-138
Your Reference	UNITS	PP32/0.3	PP32N-1/0.1	PP32E-1/0.1	PP32S-1/0.1	PP32W-1/0.1
Date Sampled		20.12.22	20.12.22	20.12.22	20.12.22	20.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	4.9	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	4.3	0.5	0.3	0.2	0.9
Acenaphthene	mg/kg	3.4	0.1	<0.1	<0.1	4.5
Fluorene	mg/kg	4.7	0.1	<0.1	<0.1	3.5
Phenanthrene	mg/kg	7.3	1.6	0.1	<0.1	2.8
Anthracene	mg/kg	6.4	0.9	0.5	0.1	1.1
Fluoranthene	mg/kg	24	26	3.9	0.5	5.1
Pyrene	mg/kg	34	26	4.6	0.8	5.5
Benzo(a)anthracene	mg/kg	58	19	9.3	1.2	5.9
Chrysene	mg/kg	64	17	10	2.4	5.1
Benzo(b,j+k)fluoranthene	mg/kg	150	42	25	4.0	22
Benzo(a)pyrene	mg/kg	56	10	6.4	1.3	5.1
Indeno(1,2,3-c,d)pyrene	mg/kg	17	5.8	3.3	0.6	2.8
Dibenzo(a,h)anthracene	mg/kg	6.4	2.0	1.4	0.2	1.1
Benzo(g,h,i)perylene	mg/kg	17	6.3	3.3	0.7	2.3
Total +ve PAH's	mg/kg	450	160	68	12	68
Benzo(a)pyrene TEQ calc (zero)	mg/kg	85	19	12	2.1	9.4
Benzo(a)pyrene TEQ calc(half)	mg/kg	85	19	12	2.1	9.4
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	85	19	12	2.1	9.4
Surrogate p-Terphenyl-d14	%	12	109	102	67	117

PAHs in Soil						
Our Reference		313719-143	313719-144	313719-148	313719-152	313719-156
Your Reference	UNITS	PP72/0.3	PP72N-1/0.1	PP72E-1/0.1	PP72S-1/0.1	PP72W-1/0.1
Date Sampled		20.12.22	20.12.22	20.12.22	20.12.22	20.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.3	<0.1	0.2	<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	0.3	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.4	<0.1	0.2	<0.1	<0.1
Chrysene	mg/kg	0.9	<0.1	0.4	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	2.2	<0.2	0.7	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.86	<0.05	0.3	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	<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	0.5	<0.1	0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	6.2	<0.05	2.1	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.3	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.3	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.3	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	70	72	70	69	67

PAHs in Soil				
Our Reference		313719-160	313719-161	313719-162
Your Reference	UNITS	BD2012/1	BD2012/2	BD-6/1612
Date Sampled		20.12.22	20.12.22	16.12.22
Type of sample		Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.3	<0.1
Pyrene	mg/kg	<0.1	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.5	<0.1
Chrysene	mg/kg	<0.1	0.8	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	2	0.4
Benzo(a)pyrene	mg/kg	<0.05	0.5	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.2	<0.1
Total +ve PAH's	mg/kg	<0.05	4.6	0.78
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.7	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.8	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.8	<0.5
Surrogate p-Terphenyl-d14	%	71	67	71

PCBs in Soil						
Our Reference		313719-20	313719-70	313719-107	313719-108	313719-116
Your Reference	UNITS	PP50/0.1	PP38/0.1	PP44/0.3	PP44N-1/0.1	PP44S-1/0.1
Date Sampled		16.12.22	16/12/2022	16.12.22	16.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Aroclor 1016	mg/kg	<1	<0.1	<1	<0.1	<0.1
Aroclor 1221	mg/kg	<1	<0.1	<1	<0.1	<0.1
Aroclor 1232	mg/kg	<1	<0.1	<1	<0.1	<0.1
Aroclor 1242	mg/kg	<1	<0.1	<1	<0.1	<0.1
Aroclor 1248	mg/kg	<1	<0.1	<1	<0.1	<0.1
Aroclor 1254	mg/kg	<1	<0.1	<1	<0.1	<0.1
Aroclor 1260	mg/kg	<1	<0.1	<1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<1	<0.1	<1	<0.1	<0.1
Surrogate TCMX	%	11	100	11	81	82

PCBs in Soil		
Our Reference		313719-125
Your Reference	UNITS	PP32/0.3
Date Sampled		20.12.22
Type of sample		Soil
Date extracted	-	22/12/2022
Date analysed	-	28/12/2022
Aroclor 1016	mg/kg	<1
Aroclor 1221	mg/kg	<1
Aroclor 1232	mg/kg	<1
Aroclor 1242	mg/kg	<1
Aroclor 1248	mg/kg	<1
Aroclor 1254	mg/kg	<1
Aroclor 1260	mg/kg	<1
Total +ve PCBs (1016-1260)	mg/kg	<1
Surrogate TCMX	%	10

Moisture						
Our Reference		313719-1	313719-3	313719-4	313719-8	313719-12
Your Reference	UNITS	PP73/0.1	PP48/0.3	PP48N-1/0.1	PP48E-1/0.1	PP48S-1/0.1
Date Sampled		20.12.22	16.12.22	16.12.22	16.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	13	12	6.5	14	9.1

Moisture						
Our Reference		313719-16	313719-20	313719-21	313719-22	313719-26
Your Reference	UNITS	PP48W-1/0.1	PP50/0.1	PP50/0.3	PP50N-1/0.1	PP50E-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	16.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	8.6	11	19	7.7	7.8

Moisture						
Our Reference		313719-30	313719-34	313719-39	313719-40	313719-44
Your Reference	UNITS	PP50S-1/0.1	PP50W-1/0.1	PP55/0.3	PP55N-1/0.1	PP55E-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	16.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	8.9	10	11	12	16

Moisture						
Our Reference		313719-48	313719-52	313719-57	313719-58	313719-62
Your Reference	UNITS	PP55S-1/0.1	PP55W-1/0.1	PP35/0.3	PP35N-1/0.1	PP35E-1/0.1
Date Sampled		16.12.22	16.12.22	16.12.22	16.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	17	14	14	17	11

Moisture						
Our Reference		313719-66	313719-70	313719-71	313719-72	313719-76
Your Reference	UNITS	PP35S-1/0.1	PP38/0.1	PP38/0.3	PP38N-1/0.1	PP38E-1/0.1
Date Sampled		19.12.22	16/12/2022	16.12.22	16.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	25	11	17	10	13

Moisture						
Our Reference		313719-80	313719-84	313719-89	313719-90	313719-94
Your Reference	UNITS	PP38S-1/0.1	PP38W-1/0.1	PP42/0.3	PP42N-1/0.1	PP42E-1/0.1
Date Sampled		19.12.22	19.12.22	16.12.22	16.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	10	13	10	9.5	8.7

Moisture						
Our Reference		313719-98	313719-102	313719-107	313719-108	313719-112
Your Reference	UNITS	PP42S-1/0.1	PP42W-1/0.1	PP44/0.3	PP44N-1/0.1	PP44E-1/0.1
Date Sampled		19.12.22	19.12.22	16.12.22	16.12.22	19.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	6.9	8.8	16	11	16

Moisture						
Our Reference		313719-116	313719-120	313719-125	313719-126	313719-130
Your Reference	UNITS	PP44S-1/0.1	PP44W-1/0.1	PP32/0.3	PP32N-1/0.1	PP32E-1/0.1
Date Sampled		19.12.22	19.12.22	20.12.22	20.12.22	20.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	15	15	11	19	17

Moisture						
Our Reference		313719-134	313719-138	313719-143	313719-144	313719-148
Your Reference	UNITS	PP32S-1/0.1	PP32W-1/0.1	PP72/0.3	PP72N-1/0.1	PP72E-1/0.1
Date Sampled		20.12.22	20.12.22	20.12.22	20.12.22	20.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	17	13	18	12	17

Moisture						
Our Reference		313719-152	313719-156	313719-160	313719-161	313719-162
Your Reference	UNITS	PP72S-1/0.1	PP72W-1/0.1	BD2012/1	BD2012/2	BD-6/1612
Date Sampled		20.12.22	20.12.22	20.12.22	20.12.22	16.12.22
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/12/2022	22/12/2022	22/12/2022	22/12/2022	22/12/2022
Date analysed	-	28/12/2022	28/12/2022	28/12/2022	28/12/2022	28/12/2022
Moisture	%	11	10	11	12	16

Asbestos ID - materials		
Our Reference		313719-163
Your Reference	UNITS	PP48/PACM
Date Sampled		16.12.22
Type of sample		Material
Date analysed	-	03/01/2023
Mass / Dimension of Sample	-	90x70x5mm
Sample Description	-	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected
Trace Analysis	-	[NT]

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: TRH in Soil (C6-C9) NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	313719-34
Date extracted	-			22/12/2022	16	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Date analysed	-			22/12/2022	16	22/12/2022	22/12/2022		09/01/2023	22/12/2022
TRH C_6 - C_9	mg/kg	25	Org-023	<25	16	<25	<25	0	98	96
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	16	<25	<25	0	98	96
Surrogate aaa-Trifluorotoluene	%		Org-023	119	16	119	99	18	103	110

QUALITY CONTROL: TRH in Soil (C6-C9) NEPM						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			[NT]	[NT]	[NT]	[NT]	[NT]	22/12/2022	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	22/12/2022	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	[NT]	[NT]	[NT]	[NT]	112	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	313719-34
Date extracted	-			22/12/2022	16	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Date analysed	-			23/12/2022	16	23/12/2022	23/12/2022		23/12/2022	23/12/2022
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	16	<50	<50	0	98	116
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	16	<100	<100	0	80	104
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	16	<100	<100	0	86	107
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	16	<50	<50	0	98	116
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	16	<100	<100	0	80	104
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	16	<100	<100	0	86	107
Surrogate o-Terphenyl	%		Org-020	76	16	81	82	1	102	125

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	313719-3
Date extracted	-			22/12/2022	1	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Date analysed	-			28/12/2022	1	28/12/2022	28/12/2022		28/12/2022	28/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	94
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	77	91
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	101
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.3	40	82	106
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	0.5	0.6	18	82	#
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.4	0	85	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.4	0	73	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	0.3	0.3	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	86	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	115	1	85	83	2	73	110

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	313719-34
Date extracted	-			[NT]	16	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Date analysed	-			[NT]	16	28/12/2022	28/12/2022		28/12/2022	28/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	86	90
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	16	0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	81	87
Fluorene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	93	97
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	104	106
Anthracene	mg/kg	0.1	Org-022/025	[NT]	16	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	16	0.9	0.7	25	94	106
Pyrene	mg/kg	0.1	Org-022/025	[NT]	16	1.2	1	18	99	109
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	16	1.2	1	18	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	16	1.1	1	10	73	71
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	16	3.8	3.1	20	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	16	1.2	0.99	19	100	97
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	16	0.7	0.6	15	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	16	0.3	0.2	40	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	16	0.7	0.6	15	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	16	106	107	1	89	96

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	313719-125
Date extracted	-			[NT]	57	22/12/2022	22/12/2022		[NT]	22/12/2022
Date analysed	-			[NT]	57	28/12/2022	28/12/2022		[NT]	28/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	57	<0.1	<0.1	0	[NT]	#
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	57	0.1	0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	57	<0.1	<0.1	0	[NT]	#
Fluorene	mg/kg	0.1	Org-022/025	[NT]	57	<0.1	<0.1	0	[NT]	#
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	57	0.1	<0.1	0	[NT]	#
Anthracene	mg/kg	0.1	Org-022/025	[NT]	57	0.1	0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	57	0.2	0.2	0	[NT]	#
Pyrene	mg/kg	0.1	Org-022/025	[NT]	57	0.8	0.6	29	[NT]	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	57	0.4	0.4	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	57	1	1.0	0	[NT]	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	57	4.1	4.1	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	57	1.9	2.0	5	[NT]	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	57	1.0	1.0	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	57	0.3	0.3	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	57	1	1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	57	108	99	9	[NT]	#

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	313719-152
Date extracted	-			[NT]	76	22/12/2022	22/12/2022		[NT]	22/12/2022
Date analysed	-			[NT]	76	28/12/2022	28/12/2022		[NT]	28/12/2022
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	78
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	77
Fluorene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	84
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	79
Anthracene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	78
Pyrene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	83
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	76	0.1	0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	76	0.2	0.1	67	[NT]	63
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	76	0.6	0.5	18	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	76	0.2	0.1	67	[NT]	76
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	76	0.1	0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	76	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	76	0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	76	94	95	1	[NT]	69

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	94	22/12/2022	22/12/2022		[NT]	[NT]
Date analysed	-			[NT]	94	28/12/2022	28/12/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	94	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	94	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	94	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	94	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	94	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	94	0.1	0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	94	0.4	0.4	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	94	0.5	0.6	18	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	94	0.5	0.7	33	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	94	0.7	0.8	13	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	94	2.5	3.0	18	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	94	0.57	0.71	22	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	94	0.4	0.4	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	94	0.1	0.2	67	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	94	0.4	0.4	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	94	98	96	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	116	22/12/2022	22/12/2022		[NT]	[NT]
Date analysed	-			[NT]	116	28/12/2022	28/12/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	116	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	116	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	116	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	116	67	70	4	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	148	22/12/2022	22/12/2022		[NT]	[NT]
Date analysed	-			[NT]	148	28/12/2022	28/12/2022		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	148	0.2	0.1	67	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	148	0.2	<0.1	67	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	148	0.2	0.1	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	148	0.4	0.3	29	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	148	0.7	0.6	15	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	148	0.3	0.2	40	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	148	0.1	0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	148	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	148	0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	148	70	71	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	313719-125
Date extracted	-			22/12/2022	116	22/12/2022	22/12/2022		22/12/2022	22/12/2022
Date analysed	-			28/12/2022	116	28/12/2022	28/12/2022		28/12/2022	28/12/2022
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	105	119
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	116	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	94	116	82	83	1	84	97

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			[NT]	[NT]	[NT]	[NT]	[NT]	22/12/2022	[NT]
Date analysed	-			[NT]	[NT]	[NT]	[NT]	[NT]	28/12/2022	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	[NT]	[NT]	[NT]	[NT]	122	[NT]
Surrogate TCMX	%		Org-021	[NT]	[NT]	[NT]	[NT]	[NT]	93	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

PCBs in Soil:
- The PQL has been raised due to interferences from analytes (other than those being tested) in samples 313719-20, 107 and 125.
- # Percent recovery for the surrogate/matrix spike is not possible to report due to interference from analytes (other than those being tested) in sample 313719-125ms

PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of sample/s 313719-57,57d.

Douglas Partners
Geotechnics | Environment | Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No: 86548.14	**Suburb:** Badgerys Creek		**To:** Envirolab Services
Project Manager: GAR	**Order Number:**	**Sampler:** AJ/SCG	12 Ashley Street, Chatswood NSW 2067
Email Grant.Russell@douglaspartners.com.au; Ashika.Jagdish@douglaspartners.com.au			**Attn:** Nancy Zhang
Turnaround time: ☑ Standard ☐ 72 hour ☐ 48 hour ☐ 24 hour ☐ Same day			(02) 9910 6200
Prior Storage: ☑ Fridge ☐ Freezer ☐ Esky ☐ Shelf	**Do samples contain 'potential' HBM?** ☑ No ☐ Yes		(If YES, then handle, transport and store in accordance with FPM HAZID)

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M - Material	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
1	PP73/0.1			20.12.22	S	G	x										
2	PP48/0.1			16.12.22	S	G										x	
3	PP48/0.3			16.12.22	S	G	x										
4	PP48N-1/0.1			16.12.22	S	G	x										
5	PP48N-1/0.3			16.12.22	S	G										x	
6	PP48N-1.5/0.1			16.12.22	S	G										x	
7	PP48N-1.5/0.3			16.12.22	S	G										x	
8	PP48E-1/0.1			16.12.22	S	G	x										
9	PP48E-1/0.3			16.12.22	S	G										x	
10	PP48E-1.5/0.1			16.12.22	S	G										x	
11	PP48E-1.5/0.3			16.12.22	S	G										x	
12	PP48S-1/0.1			16.12.22	S	G	x										
13	PP48S-1/0.3			16.12.22	S	G										x	
14	PP48S-1.5/0.1			16.12.22	S	G										x	

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Ph: (02) 9910 6200

Job No: 313719
Date Received: 21/12/22
Time Received: 1400
Received By: ER
Temp: Cool/Ambient 10°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Metals to analyse:			**LAB RECEIPT**
Number of samples in container: 7	**Transported to laboratory by:**		**Lab Ref. No:**
Send results to: Douglas Partners Pty Ltd			**Received by:**
Address: 18 Waler Crescent, Smeaton Grange	**Phone:** (02) 4647 0075		**Date & Time:**
Relinquished by: AJ	**Date:** 16.12.22	**Signed:**	**Signed:**

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Geotechnics / Environment / Groundwater

CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Lansvale	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
15	PP48S-1.5/0.3			16.12.22	S	G										x	
16	PP48W-1/0.1			16.12.22	S	G	x		x								313719
17	PP48W-1/0.3			16.12.22	S	G										x	21/12/22
18	PP48W-1.5/0.1			16.12.22	S	G										x	OR
19	PP48W-1.5/0.3			16.12.22	S	G										x	
20	PP50/0.1			16.12.22	S	G		x									
21	PP50/0.3			16.12.22	S	G	x										
22	PP50N-1/0.1			16.12.22	S	G	x										
23	PP50N-1/0.3			16.12.22	S	G										x	
24	PP50N-1.5/0.1			16.12.22	S	G										x	
25	PP50N-1.5/0.3			16.12.22	S	G										x	
26	PP50E-1/0.1			16.12.22	S	G	x										
27	PP50E-1/0.3			16.12.22	S	G										x	
28	PP50E-1.5/0.1			16.12.22	S	G										x	
29	PP50E-1.5/0.3			16.12.22	S	G										x	
30	PP50S-1/0.1			16.12.22	S	G	x										
31	PP50S-1/0.3			16.12.22	S	G										x	
32	PP50S-1.5/0.1			16.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:**	Badgerys Creek	**To:**	Envirolab Services
Project Manager:	GAR			**Dispatch date:**	16.12.22

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water M -	G - glass P - plastic	PAH	PCBs	TRH							ON HOLD	
33	PP50S-1.5/0.3			16.12.22	S	G										x	
34	PP50W-1/0.1			16.12.22	S	G	x		x								313719
35	PP50W-1/0.3			16.12.22	S	G										x	21/12/22
36	PP50W-1.5/0.1			16.12.22	S	G										x	CR
37	PP50W-1.5/0.3			16.12.22	S	G										x	
38	PP55/0.1			16.12.22	S	G										x	
39	PP55/0.3			16.12.22	S	G	x										
40	PP55N-1/0.1			16.12.22	S	G	x										
41	PP55N-1/0.3			16.12.22	S	G										x	
42	PP55N-1.5/0.1			16.12.22	S	G										x	
43	PP55N-1.5/0.3			16.12.22	S	G										x	
44	PP55E-1/0.1			16.12.22	S	G	x										
45	PP55E-1/0.3			16.12.22	S	G										x	
46	PP55E-1.5/0.1			16.12.22	S	G										x	
47	PP55E-1.5/0.3			16.12.22	S	G										x	
48	PP55S-1/0.1			16.12.22	S	G	x										
49	PP55S-1/0.3			16.12.22	S	G										x	
50	PP55S-1.5/0.1			16.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
51	PP55S-1.5/0.3			16.12.22	S	G										x	
52	PP55W-1/0.1			16.12.22	S	G	x		x								
53	PP55W-1/0.3			16.12.22	S	G										x	
54	PP55W-1.5/0.1			16.12.22	S	G										x	313719
55	PP55W-1.5/0.3			16.12.22	S	G										x	21/12/22
56	PP35/0.1			16.12.22	S	G										x	CR
57	PP35/0.3			16.12.22	S	G	x										
58	PP35N-1/0.1			16.12.22	S	G	x										
59	PP35N-1/0.3			16.12.22	S	G										x	
60	PP35N-1.5/0.1			16.12.22	S	G										x	
61	PP35N-1.5/0.3			16.12.22	S	G										x	
62	PP35E-1/0.1			19.12.22	S	G	x										
63	PP35E-1/0.3			19.12.22	S	G										x	
64	PP35E-1.5/0.1			19.12.22	S	G										x	
65	PP35E-1.5/0.3			19.12.22	S	G										x	
66	PP35S-1/0.1			19.12.22	S	G	x										
67	PP35S-1/0.3			19.12.22	S	G										x	
68	PP35S-1.5/0.1			19.12.22	S	G										x	
69	PP35S-1.5/0.3			19.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
NR	PP35W-1/0.1			19.12.22	S	G	x		x								
NR	PP35W-1/0.3			19.12.22	S	G										x	
NR	PP35W-1.5/0.1			19.12.22	S	G										x	
NR	PP35W-1.5/0.3			19.12.22	S	G										x	313719
70	PP38/0.1			16.12.22	S	G		x									21/12/22
71	PP38/0.3			16.12.22	S	G	x										CR
72	PP38N-1/0.1			16.12.22	S	G	x										
73	PP38N-1/0.3			16.12.22	S	G										x	
74	PP38N-1.5/0.1			16.12.22	S	G										x	
75	PP38N-1.5/0.3			16.12.22	S	G										x	
76	PP38E-1/0.1			19.12.22	S	G	x										
77	PP38E-1/0.3			19.12.22	S	G										x	
78	PP38E-1.5/0.1			19.12.22	S	G										x	
79	PP38E-1.5/0.3			19.12.22	S	G										x	
80	PP38S-1/0.1			19.12.22	S	G	x										
81	PP38S-1/0.3			19.12.22	S	G										x	
82	PP38S-1.5/0.1			19.12.22	S	G										x	
83	PP38S-1.5/0.3			19.12.22	S	G										x	
84	PP38W-1/0.1			19.12.22	S	G	x		x								

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID			Date Sampled	Sample Type	Container Type	Analytes										Notes/ Preservation/ Additional Requirements
	Location / Other ID	Depth From	Depth To		S - soil W - water M -	G - glass P - plastic	PAH	PCBs	TRH							ON HOLD	
85	PP38W-1/0.3			19.12.22	S	G										x	
86	PP38W-1.5/0.1			19.12.22	S	G										x	
87	PP38W-1.5/0.3			19.12.22	S	G										x	
88	PP42/0.1			16.12.22	S	G										x	313719
89	PP42/0.3			16.12.22	S	G	x										21/12/22
90	PP42N-1/0.1			16.12.22	S	G	x										CR
91	PP42N-1/0.3			16.12.22	S	G										x	
92	PP42N-1.5/0.1			16.12.22	S	G										x	
93	PP42N-1.5/0.3			16.12.22	S	G										x	
94	PP42E-1/0.1			19.12.22	S	G	x										
95	PP42E-1/0.3			19.12.22	S	G										x	
96	PP42E-1.5/0.1			19.12.22	S	G										x	
97	PP42E-1.5/0.3			19.12.22	S	G										x	
98	PP42S-1/0.1			19.12.22	S	G	x										
99	PP42S-1/0.3			19.12.22	S	G										x	
100	PP42S-1.5/0.1			19.12.22	S	G										x	
101	PP42S-1.5/0.3			19.12.22	S	G										x	
102	PP42W-1/0.1			19.12.22	S	G	x		x								
103	PP42W-1/0.3			19.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services	
Project Manager: GAR		**Dispatch date:**	16.12.22

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
104	PP42W-1.5/0.1			19.12.22	S	G										x	
105	PP42W-1.5/0.3			19.12.22	S	G										x	
106	PP44/0.1			16.12.22	S	G										x	
107	PP44/0.3			16.12.22	S	G	x	x									
108	PP44N-1/0.1			16.12.22	S	G	x	x									313719
109	PP44N-1/0.3			16.12.22	S	G										x	21/12/22
110	PP44N-1.5/0.1			16.12.22	S	G										x	CR
111	PP44N-1.5/0.3			16.12.22	S	G										x	
112	PP44E-1/0.1			19.12.22	S	G	x										
113	PP44E-1/0.3			19.12.22	S	G										x	
114	PP44E-1.5/0.1			19.12.22	S	G										x	
115	PP44E-1.5/0.3			19.12.22	S	G										x	
116	PP44S-1/0.1			19.12.22	S	G	x	x									
117	PP44S-1/0.3			19.12.22	S	G										x	
118	PP44S-1.5/0.1			19.12.22	S	G										x	
119	PP44S-1.5/0.3			19.12.22	S	G										x	
120	PP44W-1/0.1			19.12.22	S	G	x		x								
121	PP44W-1/0.3			19.12.22	S	G										x	
122	PP44W-1.5/0.1			19.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No: 86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services	
Project Manager: GAR		**Dispatch date:**	16.12.22

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
123	PP44W-1.5/0.3			19.12.22	S	G										x	
124	PP32/0.1			20.12.22	S	G										x	
125	PP32/0.3			20.12.22	S	G	x	x									
126	PP32N-1/0.1			20.12.22	S	G	x										
127	PP32N-1/0.3			20.12.22	S	G										x	313719
128	PP32N-1.5/0.1			20.12.22	S	G										x	21/12/22
129	PP32N-1.5/0.3			20.12.22	S	G										x	CR
130	PP32E-1/0.1			20.12.22	S	G	x										
131	PP32E-1/0.3			20.12.22	S	G										x	
132	PP32E-1.5/0.1			20.12.22	S	G										x	
133	PP32E-1.5/0.3			20.12.22	S	G										x	
134	PP32S-1/0.1			20.12.22	S	G	x										
135	PP32S-1/0.3			20.12.22	S	G										x	
136	PP32S-1.5/0.1			20.12.22	S	G										x	
137	PP32S-1.5/0.3			20.12.22	S	G										x	
138	PP32W-1/0.1			20.12.22	S	G	x		x								
139	PP32W-1/0.3			20.12.22	S	G										x	
140	PP32W-1.5/0.1			20.12.22	S	G										x	
141	PP32W-1.5/0.3			20.12.22	S	G										x	

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Depth From	Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH							ON HOLD	Notes/ Preservation/ Additional Requirements
142	PP72/0.1			20.12.22	S	G										x	
143	PP72/0.3			20.12.22	S	G	x										
144	PP72N-1/0.1			20.12.22	S	G	x										
145	PP72N-1/0.3			20.12.22	S	G										x	
146	PP72N-1.5/0.1			20.12.22	S	G										x	313719
147	PP72N-1.5/0.3			20.12.22	S	G										x	21/12/22
148	PP72E-1/0.1			20.12.22	S	G	x										CR
149	PP72E-1/0.3			20.12.22	S	G										x	
150	PP72E-1.5/0.1			20.12.22	S	G										x	
151	PP72E-1.5/0.3			20.12.22	S	G										x	
152	PP72S-1/0.1			20.12.22	S	G	x										
153	PP72S-1/0.3			20.12.22	S	G										x	
154	PP72S-1.5/0.1			20.12.22	S	G										x	
155	PP72S-1.5/0.3			20.12.22	S	G										x	
156	PP72W-1/0.1			20.12.22	S	G	x		x								
157	PP72W-1/0.3			20.12.22	S	G										x	
158	PP72W-1.5/0.1			20.12.22	S	G										x	
159	PP72W-1.5/0.3			20.12.22	S	G										x	
160	BD2012/1			20.12.22	S	G	x		x								

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CHAIN OF CUSTODY DESPATCH SHEET

Project No:	86548.14	**Suburb:** Badgerys Creek	**To:** Envirolab Services
Project Manager:	GAR		**Dispatch date:** 16.12.22

Lab ID	Sample ID: Location / Other ID	Sample ID: Depth From	Sample ID: Depth To	Date Sampled	Sample Type: S - soil W - water M -	Container Type: G - glass P - plastic	Analytes: PAH	PCBs	TRH		Asbestos ID						ON HOLD	Notes/ Preservation/ Additional Requirements
161	BD2012/2			20.12.22	S	G	x											
162	BD-6/1612			16.12.22	S	G	x		x									
163	PP48/PACM										x							Asbestos ID
																		313719
																		21/12/22
																		1400

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
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customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Douglas Partners Pty Ltd Smeaton Grange
Attention	Ashika Jagdish, Grant Russell

Sample Login Details

Your reference	86548.14, Badgerys Creek
Envirolab Reference	313719
Date Sample Received	21/12/2022
Date Instructions Received	21/12/2022
Date Results Expected to be Reported	09/01/2023

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	162 Soil, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	10
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Missing

PP35W-1/0.1
PP35W-1/0.3
PP35W-1.5/0.1
PP35W-1.5/0.3

Please direct any queries to:

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

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	Asbestos ID - materials	On Hold
PP73/0.1			✓			
PP48/0.1						✓
PP48/0.3			✓			
PP48N-1/0.1			✓			
PP48N-1/0.3						✓
PP48N-1.5/0.1						✓
PP48N-1.5/0.3						✓
PP48E-1/0.1			✓			
PP48E-1/0.3						✓
PP48E-1.5/0.1						✓
PP48E-1.5/0.3						✓
PP48S-1/0.1			✓			
PP48S-1/0.3						✓
PP48S-1.5/0.1						✓
PP48S-1.5/0.3						✓
PP48W-1/0.1	✓	✓	✓			
PP48W-1/0.3						✓
PP48W-1.5/0.1						✓
PP48W-1.5/0.3						✓
PP50/0.1				✓		
PP50/0.3			✓			
PP50N-1/0.1			✓			
PP50N-1/0.3						✓
PP50N-1.5/0.1						✓
PP50N-1.5/0.3						✓
PP50E-1/0.1			✓			
PP50E-1/0.3						✓
PP50E-1.5/0.1						✓
PP50E-1.5/0.3						✓
PP50S-1/0.1			✓			
PP50S-1/0.3						✓
PP50S-1.5/0.1						✓

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	Asbestos ID - materials	On Hold
PP50S-1.5/0.3						✓
PP50W-1/0.1	✓	✓	✓			
PP50W-1/0.3						✓
PP50W-1.5/0.1						✓
PP50W-1.5/0.3						✓
PP55/0.1						✓
PP55/0.3			✓			
PP55N-1/0.1			✓			
PP55N-1/0.3						✓
PP55N-1.5/0.1						✓
PP55N-1.5/0.3						✓
PP55E-1/0.1			✓			
PP55E-1/0.3						✓
PP55E-1.5/0.1						✓
PP55E-1.5/0.3						✓
PP55S-1/0.1			✓			
PP55S-1/0.3						✓
PP55S-1.5/0.1						✓
PP55S-1.5/0.3						✓
PP55W-1/0.1	✓	✓	✓			
PP55W-1/0.3						✓
PP55W-1.5/0.1						✓
PP55W-1.5/0.3						✓
PP35/0.1						✓
PP35/0.3			✓			
PP35N-1/0.1			✓			
PP35N-1/0.3						✓
PP35N-1.5/0.1						✓
PP35N-1.5/0.3						✓
PP35E-1/0.1			✓			
PP35E-1/0.3						✓
PP35E-1.5/0.1						✓

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	Asbestos ID - materials	On Hold
PP35E-1.5/0.3						✓
PP35S-1/0.1			✓			
PP35S-1/0.3						✓
PP35S-1.5/0.1						✓
PP35S-1.5/0.3						✓
PP38/0.1				✓		
PP38/0.3			✓			
PP38N-1/0.1			✓			
PP38N-1/0.3						✓
PP38N-1.5/0.1						✓
PP38N-1.5/0.3						✓
PP38E-1/0.1			✓			
PP38E-1/0.3						✓
PP38E-1.5/0.1						✓
PP38E-1.5/0.3						✓
PP38S-1/0.1			✓			
PP38S-1/0.3						✓
PP38S-1.5/0.1						✓
PP38S-1.5/0.3						✓
PP38W-1/0.1	✓	✓	✓			
PP38W-1/0.3						✓
PP38W-1.5/0.1						✓
PP38W-1.5/0.3						✓
PP42/0.1						✓
PP42/0.3			✓			
PP42N-1/0.1			✓			
PP42N-1/0.3						✓
PP42N-1.5/0.1						✓
PP42N-1.5/0.3						✓
PP42E-1/0.1			✓			
PP42E-1/0.3						✓
PP42E-1.5/0.1						✓

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	Asbestos ID - materials	On Hold
PP42E-1.5/0.3						✓
PP42S-1/0.1			✓			
PP42S-1/0.3						✓
PP42S-1.5/0.1						✓
PP42S-1.5/0.3						✓
PP42W-1/0.1	✓	✓	✓			
PP42W-1/0.3						✓
PP42W-1.5/0.1						✓
PP42W-1.5/0.3						✓
PP44/0.1						✓
PP44/0.3			✓	✓		
PP44N-1/0.1			✓	✓		
PP44N-1/0.3						✓
PP44N-1.5/0.1						✓
PP44N-1.5/0.3						✓
PP44E-1/0.1			✓			
PP44E-1/0.3						✓
PP44E-1.5/0.1						✓
PP44E-1.5/0.3						✓
PP44S-1/0.1			✓	✓		
PP44S-1/0.3						✓
PP44S-1.5/0.1						✓
PP44S-1.5/0.3						✓
PP44W-1/0.1	✓	✓	✓			
PP44W-1/0.3						✓
PP44W-1.5/0.1						✓
PP44W-1.5/0.3						✓
PP32/0.1						✓
PP32/0.3			✓	✓		
PP32N-1/0.1			✓			
PP32N-1/0.3						✓
PP32N-1.5/0.1						✓

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	Asbestos ID - materials	On Hold
PP32N-1.5/0.3						✓
PP32E-1/0.1			✓			
PP32E-1/0.3						✓
PP32E-1.5/0.1						✓
PP32E-1.5/0.3						✓
PP32S-1/0.1			✓			
PP32S-1/0.3						✓
PP32S-1.5/0.1						✓
PP32S-1.5/0.3						✓
PP32W-1/0.1	✓	✓	✓			
PP32W-1/0.3						✓
PP32W-1.5/0.1						✓
PP32W-1.5/0.3						✓
PP72/0.1						✓
PP72/0.3			✓			
PP72N-1/0.1			✓			
PP72N-1/0.3						✓
PP72N-1.5/0.1						✓
PP72N-1.5/0.3						✓
PP72E-1/0.1			✓			
PP72E-1/0.3						✓
PP72E-1.5/0.1						✓
PP72E-1.5/0.3						✓
PP72S-1/0.1			✓			
PP72S-1/0.3						✓
PP72S-1.5/0.1						✓
PP72S-1.5/0.3						✓
PP72W-1/0.1	✓	✓	✓			
PP72W-1/0.3						✓
PP72W-1.5/0.1						✓
PP72W-1.5/0.3						✓
BD2012/1	✓	✓	✓			

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Sample ID	TRH in Soil (C6-C9) NEPM	svTRH (C10-C40) in Soil	PAHs in Soil	PCBs in Soil	Asbestos ID - materials	On Hold
BD2012/2			✓			
BD-6/1612	✓	✓	✓			
PP48/PACM					✓	

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

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

About this Report

Douglas Partners

Introduction

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

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

Copyright

Borehole and Test Pit Logs

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

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

Groundwater

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

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

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

Reports

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

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

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

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

About this Report

Site Anomalies

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

Information for Contractual Purposes

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

Site Inspection

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