CONTAMINATION ASSESSMENT

Endeavour Energy Occupied Area
221-227 and 289-311 Luddenham Road, Orchard Hills NSW

Prepared for **Co-ordinated Infrastructure**

23 October 2024

Ref: DRM P23.1039.V13-R03

Prepared for	Co-ordinated Infrastructure
Report Title	Contamination Assessment
Site	Endeavour Energy Occupied Area 221-227 and 289-311 Luddenham Road, Orchard Hills NSW
File Reference	DRM P23.1039.V13-R03
Date	23 October 2024

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DOCUMENT HISTORY & DISTRIBUTION

Version	Date	Author	Reviewer	Distributed to
Final	23 October 2024	Dilanka Premadasa	Nalin de Silva	George Henien of Co-ordinated Infrastructure

LIMITATIONS AND GENERAL NOTES

LIMITATIONS

The report was prepared in accordance with the scope agreed between **Development Risk Management Pty Ltd (DRM)** and the client. The scope of services was agreed to with due consideration of a range of factors including time, budget, access and site constraints. The report is provided for the specific purpose as described in the report. The report may not contain sufficient information for purposes other than that described in the report.

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Subsurface conditions can change with time and can vary between test locations. Therefore, actual conditions in areas not sampled may differ from those predicted since no subsurface investigation, no matter how comprehensive, can reveal all subsurface details and anomalies. Anthropogenic impact and natural causes can also affect subsurface conditions and thus the continuing adequacy of these reports. Seasonal variations can also affect subsurface conditions. DRM should be kept informed of any such events and should be retained to identify variances, conduct additional tests if required, and recommend solutions to problems encountered on site.

Data obtained from nominated discrete locations, subsequent laboratory testing and empirical or external sources are interpreted by trained professionals in order to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions in accordance with any relevant industry standards, guidelines or procedures.

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1. INTRODUCTION

1.1. Background

Development Risk Management Pty Ltd (DRM) was engaged by Co-ordinated Infrastructure (the client) to undertake a Contamination Assessment for the for the portion of the land located at west of the existing electrical substation at 221-227 and 289-311 Luddenham Road, Orchard Hills, NSW (the property). The assessment area shown in Figure 1 will be referred to as "the site" from here on. Based on the information provided by client, DRM understood the following:

- The site is a portion of the property proposed to be developed for commercial/industrial land use (Alspec Industrial Business Park), with the development application for the earthworks under review by Penrith City Council;
- A stage 1 preliminary site investigation (CS, 2021)[1] and stage 2 detailed site investigation (CS, 2021a)[2] did not identify unacceptable contamination at the site;
- The site is currently occupied by Endeavour Energy[3];
- Penrith City Council has reviewed the final validation report (DRM, 2024)[4] and advised that.

> *"…A review of the Final Validation Report identifies the area occupied by Endeavour Energy to the west of the existing switch station. A review of the civil plans indicates that works are proposed within the area identified as occupied by Endeavour Energy. The Final Validation Report mentions this area is used for equipment storage and stockpiling of soil and aggregates.*
>
> *Should this area be located within the area of proposed works the application will need to demonstrate that the land is suitable for its intended purpose in relation to land contamination."*

This contamination assessment was conducted to assess the suitability of the site for the proposed land use.

1.2. Objectives

The objectives of this project were to:

- Assess the potential for contamination to be present at the site from usage by Endeavour energy;
- Assess the contamination status of the site;
- Assess the suitability of the site, in the context of land contamination, for the proposed industrial land use; and
- Provide recommendations for supplementary investigations, contamination management, or remedial works.

1.3. Scope of Work

The scope of work undertaken to address the project objectives included:

- Review of geological and topographic maps and a selection of aerial photographs for the site;
- A walkover of the site followed by excavation of eight test pits (TP801, TP802, TP804 to TP808) using a 15 tonne excavator to a maximum depth of 0.9m bgl and one test pit (TP803) using hand tools to a maximum depth of 0.5mbgl;
- Soil sampling and laboratory analysis of selected samples for a range of contaminants including metals, TRH/BTEX, PAH and asbestos. The sampling point location plan is presented in Figure 3; and
- Data assessment and reporting.

[1] CS, 2021. "Stage 1 Preliminary Site Investigation 221-227 and 289-311 Luddenham Road, Orchard Hill, NSW, 2748" (ref: 5046200067-R01-rev01, dated 9 July 2021)
[2] CS, 2021a. "Stage 2 Detailed Site Investigation 221-227 And 289-311 Luddenham Road, Orchard HILLS, NSW, 2748" (Ref: 10791EV.P.68-R04, dated 10 February 2021)
[3] Though DRM notes that Endeavour Energy was in the process of vacating the site on the day of the field investigation for this contamination assessment (09 October 2024)
[4] DRM, 2024. "Final Validation Report, 221-227 & 289-311 Luddenham Rd, Orchard Hills, NSW" (ref: DRM P23.1039-R05r1 dated 23 August 2024)

The scope of works was undertaken with reference to the relevant sections of NEPC (2013), NSW EPA (2020b) and WA DOH (2021).

2. RESULTS

2.1. Desktop Review

2.1.1. Geology

The Department of Mineral Resources Geological Survey of NSW Penrith 1:100,000 Geological Series Sheet 9030 (Edition 1) 1991, indicated that the site is likely to be underlain by Triassic-aged Ashfield Shale of the Wianamatta Group. This formation comprises shale, carbonaceous claystone, claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff.

2.1.2. Acid Sulphate Soils

A review of the NSW Government's ESPADE website, indicated that, the site is not mapped as having acid sulphate soil risks.

2.1.3. Aerial Image Review

DRM reviewed the indexed aerial images readily accessible via NSW Government Spatial Data Services web page and aerial images provided by MetroMaps. The review indicated the following:

- From 1947 to 1975 the site appears to be vacant;
- After 1975 the site appears to be used for rural agricultural purpose;
- The site appears to be occupied by Endeavor Energy (EE) after 2022, during the construction of the electrical sub-station.at eastern side. There is evidence of heavy machinery storage, parking, stockpiling of soils and storage of construction materials; and
- A sedimentation pond was present at the central east portion.

2.2. Site Observations

DRM conducted a site walkover on 09 October 2024.

The site was fenced and well maintained. The entrance is from the northern boundary. Compacted road base material was present at the northern and central portion of the site. Fill material at the southeastern portion had been scraped at the time of the site walkover, which we understood, from Endeavour Energy personnel, was in preparation for vacating the site. The ground surface of the remaining area was covered with either road base materials or clay. Heavy machinery and vehicles were parked at the site. Stockpiles of construction materials (gravel, sand, etc.) were located along the western portion of the site, but some of these were being removed at the time of site walkover.

The sedimentation pond was understood to have been backfilled with the material that was excavated to create it.

The general layout and current site features are presented in Figure 2.

2.3. Sub-Surface Conditions

2.3.1. Site Specific Geology

Observations made of soils encountered during intrusive investigation works were recorded on logs, which are presented in Appendix A.

North and central portion of the site were comprised of highly compacted road base material to a depth of approximately 0.3m (bgl), which was apparently placed by Endeavour Energy. The road base filling was underlain by a layer of gravelly fill mixed with demolition rubble.

The south and southwestern portions of the site comprised of a 0.3m thick layer of gravelly clay fill, and was underlain by natural clay (orange brown clay with medium plasticity). The gravelly clay fill material was underlain by dark brown topsoil in two test pits (TP803 and TP806).

Representative photographs are presented below. All photographs during field work can be accessed via DRM SharePoint.

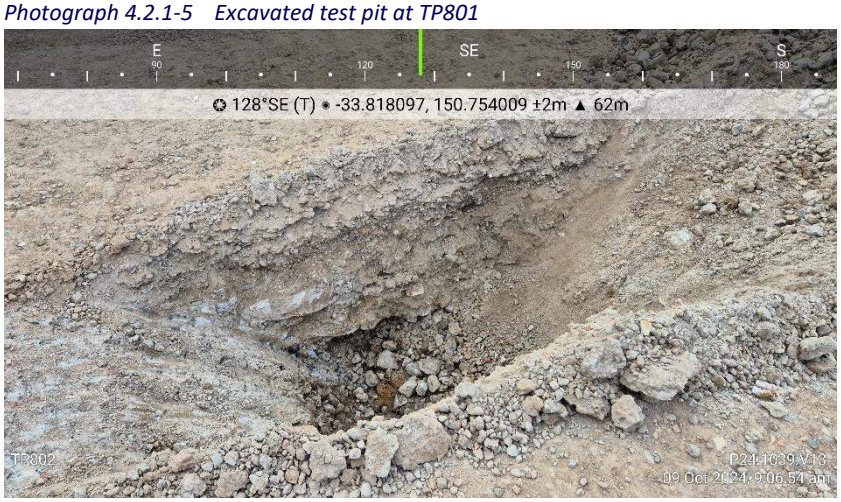
Photograph 4.2.1-1 Looking north from the middle of the site

Photograph 4.2.1-2 Looking south from the middle of the site

Photograph 4.2.1-3 Scraped fill material at the southeastern corner of the site

Photograph 4.2.1-4 Construction material stockpiles along the western portion of the site

Photograph 4.2.1-5 Excavated test pit at TP801



Photograph 4.2.1-6 Field screening at test pit TP804

2.3.2. Potential Asbestos Containing Materials

No visual evidence of asbestos containing materials (ACM) were encountered or observed during the inspection and field work. However, demolition rubble, which can be an indicator of asbestos, were observed in four test pits (TP801, TP802, TP804 and TP805), underlying the fill materials placed by Endeavor Energy.

The bulk 10L soil samples collected from test pits TP801, TP802, TP804 and TP805 were screened on site for the presence of asbestos containing material greater than 7mm in size, in accordance with the procedure specified in the NEPM (NEPC, 2013). Potential ACM were not identified during the screening.

The results of the asbestos field screening are presented in Table T1.

2.3.3. Other Evidence of Contamination

Olfactory or visual evidence of contamination (odours, sheens, discolorations or stains for example) were not observed during the excavation of test pits.

2.4. Analytical Results

DRM conducted analysis of selected samples for typical contaminants of concern, as shown on the table below, at a NATA accredited laboratory.

Table 2.4-1 Analytical Schedule

AEC	Sampling Point ID	TRH / BTEX	PAH	OCP/PCB	Metals (8)	Asbestos (ID)	Asbestos (0.001%)
Northern portion of the site with compacted road base material	TP801, TP802, TP804	3	1	1	4	-	3
Southeastern portion of the site scraped with potentially filled soil	TP806, TP808	2	1	1	2	-	1
General coverage	TP803, TP805, TP807	2	-	-	3	-	2

The analytical results for the samples analysed are presented in Table T2. The laboratory analytical certificates are attached in Appendix B.

Analytical results indicated that:

- Asbestos was not detected in the samples analysed;
- The concentration of BTEX, OCP and PCB were less than the laboratory limit of reporting (LOR); and
- The concentration of TRH, PAH and heavy metals were less than the adopted Health Investigation Levels (HIL D) and Ecological Investigation levels (EILs).

2.5. Quality Assurance

The assessment was conducted in accordance with industry standards and in general accordance with the NEPM (NEPC, 2013).

The fieldwork tasks were undertaken by suitably experienced field staff. Samples were collected from relevant sampling points using a fresh pair of disposable nitrile gloves. Samples were labelled and preserved in ice and transported under chain of custody protocols to be analysed by a NATA accredited laboratory.

Review of the laboratory QAQC reports did not identify significant issues that would preclude the data from being useable for this assessment.

Based on the above, DRM considers that the data is suitable for the purpose of this assessment.

3. DISCUSSION

3.1. Potential for Contamination

The site observations and the testing conducted did not identify unacceptable contamination. The activities conducted by Endeavour Energy do not appear to have potential to cause significant contamination. Based on observations, intrusive assessment and the analytical results, DRM considers that the potential for the site to contain significant unacceptable contamination at the site is low.

This contamination assessment was limited to the soils underlying the fill materials placed on the site by Endeavour Energy. DRM has been informed that fill layer placed across the site by Endeavour Energy is to be removed offsite prior to vacating the site. Regardless, DRM considers that the fill materials placed across the site by Endeavour Energy is unlikely to contain unacceptable contamination.

Whilst the field screening and laboratory analysis did not identify asbestos in the fill materials (that contained demolition rubble) underlying the fill placed by Endeavour Energy, the potential for isolated fragments of asbestos to be encountered during future development works cannot be precluded. Such instances (if any) should be managed in accordance with the unexpected finds protocol (UFP) prepared by CS (2021) [5].

3.2. Site Suitability For Proposed Land Use

DRM considers that **the site is suitable for the proposed industrial land use.**

[5] CS, 2021b. Bulk Earthworks Phase Unexpected Finds of Contamination in Soil Management Protocol for Portion of Lot 1, DP1099147 and Lot 242, DP1088991' 221-227 and 289-317 Luddenham Road, Orchard Hills, NSW, ref: 10791EV.P.68-R09 dated 15 March 2021

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the assessment of desktop review information, field observations and analytical results, DRM makes the following conclusions:

- The potential for significant unacceptable contamination to be present in the soils underlying the fill material placed across the site by Endeavour Energy is low. However, the potential to encounter isolated patches of contamination (asbestos) cannot be precluded. The fill materials placed across the site by Endeavour Energy will be removed offsite prior to vacating the site by Endeavour Energy. This should be confirmed by observation; and
- **The site is suitable for the proposed industrial land use,** from contamination perspective.

If isolated patches of contamination (asbestos for example) is encountered on site during earthworks, these should be managed in accordance with the Unexpected Finds Protocol (CS, 2021b).

This report must be read in conjunction with the *Limitations and General Notes* page at the front of this report.

5. REFERENCES

CS, 2021. “Stage 1 Preliminary Site Investigation 221-227 and 289-311 Luddenham Road, Orchard Hill, NSW, 2748” (ref: 5046200067-R01-rev01, dated 9 July 2021)

CS, 2021a. “Stage 2 Detailed Site Investigation 221-227 AND 289-311 LUDDENHAM ROAD, ORCHARD HILLS, NSW, 2748” (Ref: 10791EV.P.68-R04, dated 10 February 2021)

CS 2021b, “Bulk Earthworks Phase Unexpected Finds of Contamination in Soil Management Protocol” for Portion of Lot 1, DP1099147 and Lot 242, DP1088991’ 221-227 and 289-317 Luddenham Road, Orchard Hills, NSW, ref: 10791EV.P.68- R09 dated 15 March 2021.

DRM, 2024. “Final Validation Report, 221-227 & 289-311 Luddenham Rd, Orchard Hills, NSW” (ref: DRM P23.1039-R05r1 dated 23 August 2024)

National Environment Protection Council (NEPC) 2013a, ‘Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater’, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

National Environment Protection Council (NEPC) 2013b, ‘Schedule B(2) Guideline on Site Characterisation’, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

National Environment Protection Council (NEPC) 2013c, ‘Schedule B(4) Guideline on Site-Specific Health Risk Assessment Methodology’, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

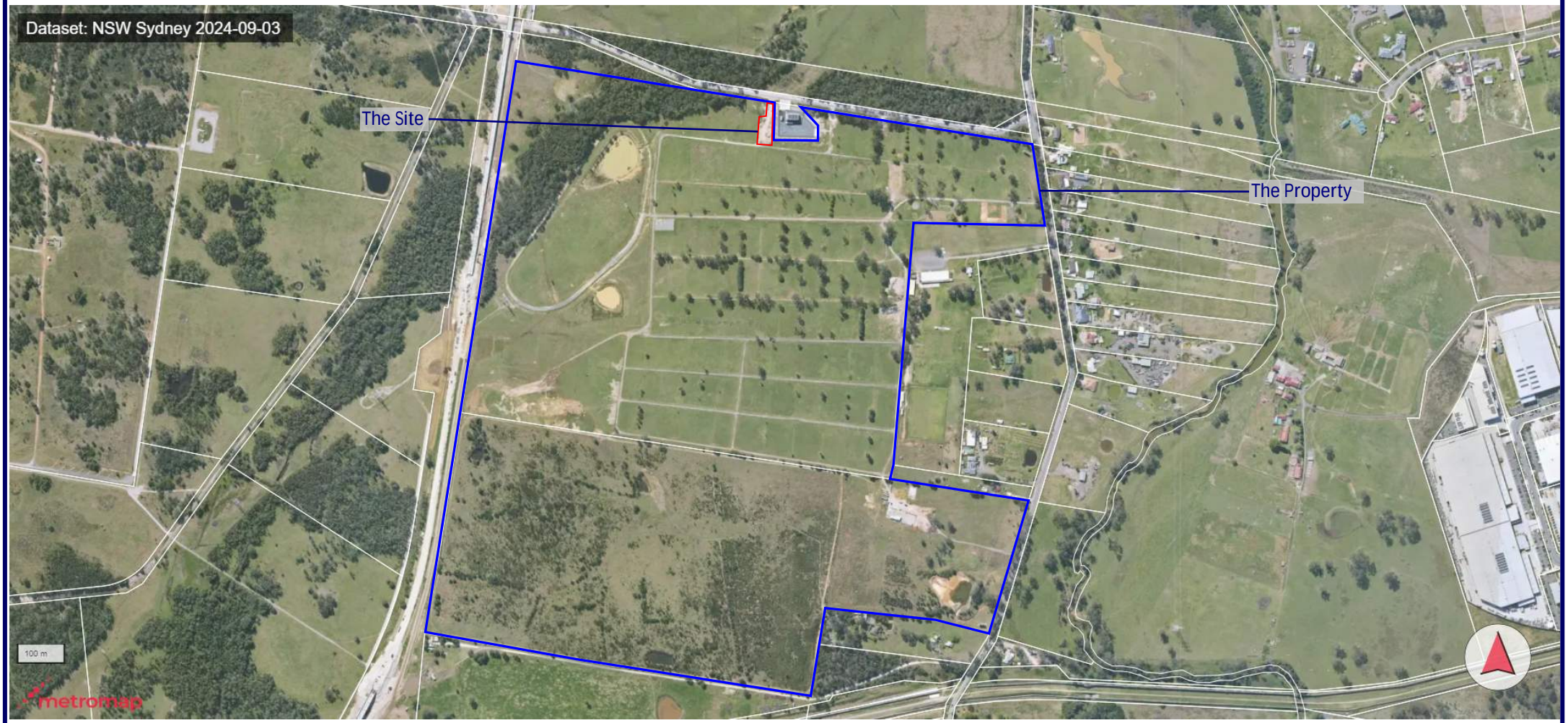
National Environment Protection Council (NEPC) 2013d, ‘Schedule B(6) Guideline on The Framework for Risk-Based Assessment of Groundwater Contamination’, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

National Environment Protection Council (NEPC) 2013e, ‘Schedule B(7) Guideline on Derivation of Health-Based Investigation Levels’, National Environment Protection (Assessment of Site Contamination) Measure (NEPM) as amended in May 2013.

NSW EPA 2020b, ‘Contaminated Land Guidelines: Consultants reporting on contaminated land’ dated May 2020, ref: EPA2020P2233.

WA DOH 2021, ‘Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia’, dated August 2021.

FIGURES



Legend

- Approximate Property Extent
- Approximate Site Extent

Development Risk Management Pty Ltd

Scale: 250 m

Date: 27 October 2024

Drawn By: DP

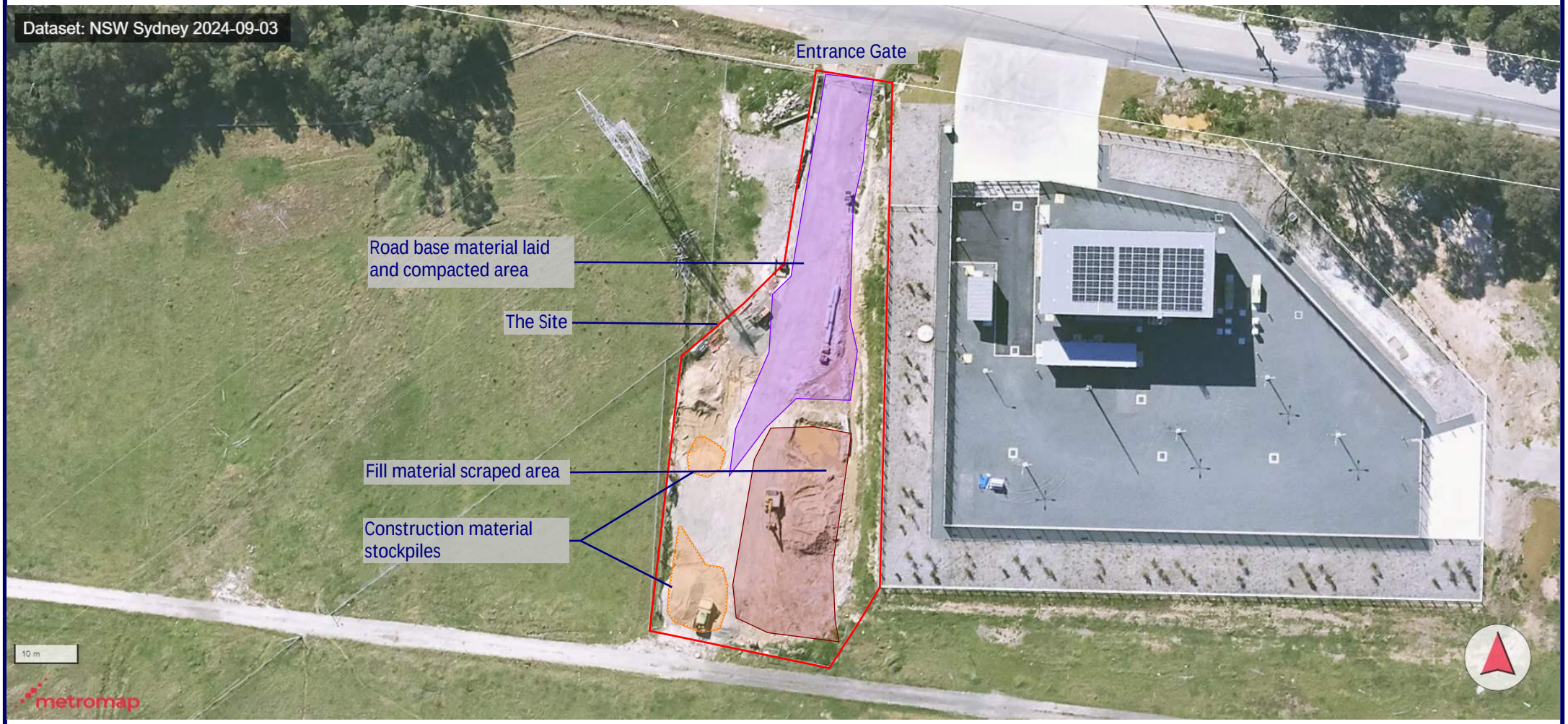
Drawing Number: P23.1039.V13-R03.F1

Client: HBB Property Pty Ltd

Project: Contamination Assessment

Location: 221-227 and 289-311 Luddenham Road, Orchard Hills

Title: Figure 1 - Site Location Plan



Legend

- Approximate Site Extent
- Construction material Stockpiles
- Road base material laid area
- Scraped fill material

Development Risk Management Pty Ltd

Scale: 40 m

Date: 10 October 2024

Drawn By: DP

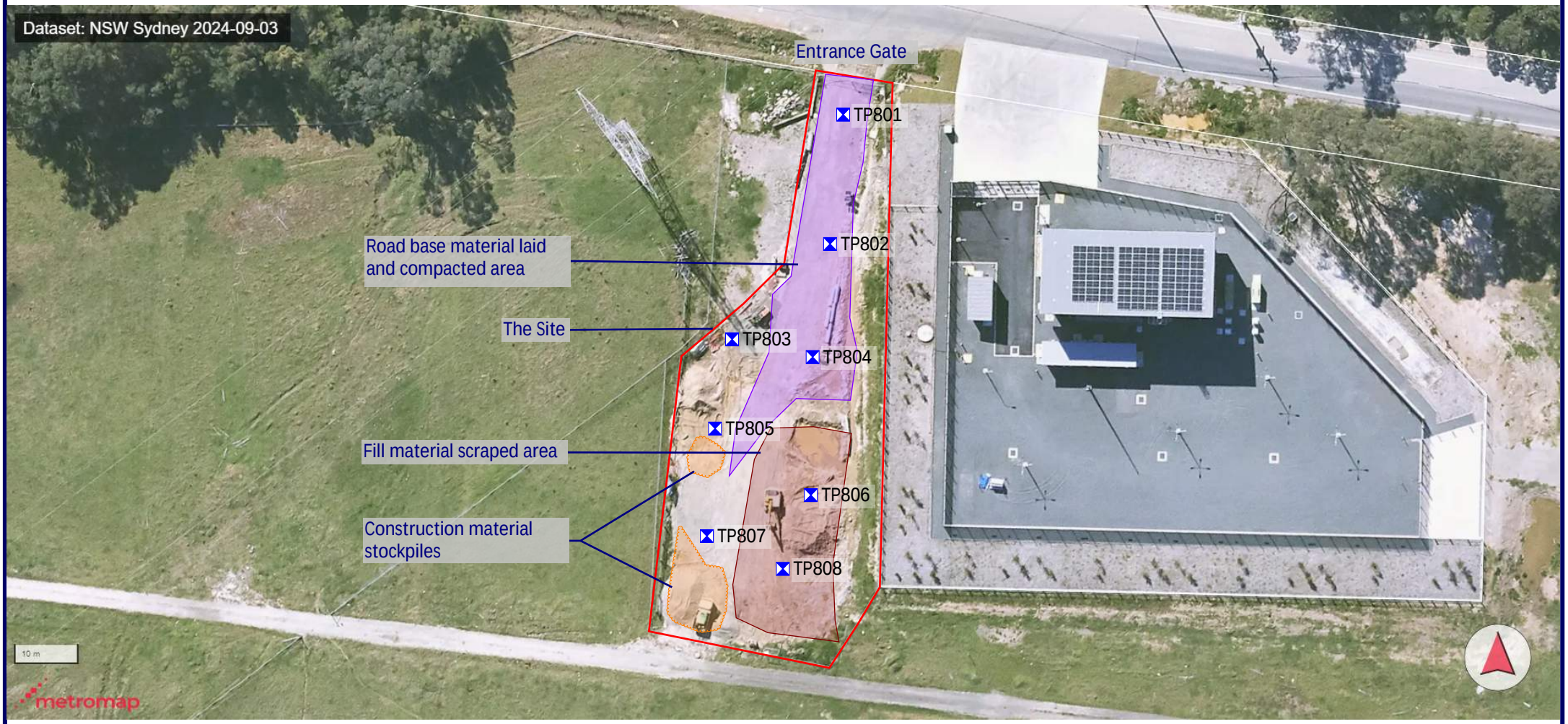
Drawing Number: P23.1039.V13-R03.F2

Client: HBB Property Pty Ltd

Project: Contamination Assessment

Location: 221-227 and 289-311 Luddenham Road, Orchard Hills

Title: Figure 2 - Site Layout Plan



Legend

- Approximate Site Extent
- Construction material Stockpiles
- Road base material laid area
- Scraped fill material
- Approximate test pit location

Development Risk Management Pty Ltd

Scale: 40 m

Date: 10 October 2024

Drawn By: DP

Drawing Number: P23.1039.V13-R03.F3

Client: HBB Property Pty Ltd

Project: Contamination Assessment

Location: 221-227 and 289-311 Luddenham Road, Orchard Hills

Title: Figure 3 - Sample Location Plan

TABLES

Table T1
Screening Results and Laboratory Results for Asbestos
Contamination Assessment - Endeavour Energy Occupied Area
221-227 And 289-311 Luddenham Road, Orchard Hills, NSW

Field Screening for Bonded Asbestos							Laboratory Analysis	
Sample ID		Mass of Soil in 10L bucket (Kg)	ACM Present in 10L?	Mass of ACM? (g)	PACM/ACM	% of Bonded Asbestos In Soil	% of ACM Reported by the lab	% of AF/FA Reported by Lab
TP801	0.3 - 0.8	21.8	NO	-	-	-	NAD	NAD
TP802	0.3 - 0.8	20.7	NO	-	-	-	NAD	NAD
TP803	0.1 - 0.3	Field screening not conducted due to no ACM or demolition rubble observed			-	-	NA	NA
TP804	0.3 - 0.6	20.7	NO	-	-	-	NAD	NAD
TP805	0.3 - 0.6	19.7	NO	-	-	-	NAD	NAD
TP806	0.2 - 0.4	Field screening not conducted due to no ACM or demolition rubble observed			-	-	NA	NA
TP807	0.3 - 0.5	Field screening not conducted due to no ACM or demolition rubble observed			-	-	NAD	NAD
TP808	0.3 - 0.5	Field screening not conducted due to no ACM or demolition rubble observed			-	-	NAD	NAD

NAD - No Asbestos Detected
NA - Not Analysed

Table T2

DRM P23.1039.V13-R03.T2

Soil Analytical Results - Endeavour Energy Occupied Area

221-227 And 289-311 Luddenham Road, Orchard Hills, NSW

	Units	LOR	HIL D	EILs	TP801_0.3-0.5	TP801_0.8-0.9	TP802_0.6-0.8	TP803_0.1-0.3	TP804_0.4-0.6	TP805_0.3-0.5	TP806_0.2-0.4	TP807_0.3-0.5	TP808_0.3-0.5	DUP1
					9/10/2024	9/10/2024	9/10/2024	9/10/2024	9/10/2024	9/10/2024	9/10/2024	9/10/2024	9/10/2024	9/10/2024
BTEX														
Benzene	mg/kg	0.1	4	65	<0.1	--	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	--
Toluene	mg/kg	0.1		125	<0.1	--	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	--
Ethylbenzene	mg/kg	0.1		105	<0.1	--	<0.1	--	<0.1	<0.1	<0.1	<0.1	<0.1	--
Total Xylenes	mg/kg	0.3		45	<0.3	--	<0.3	--	<0.3	<0.3	<0.3	<0.3	<0.3	--
Total Recoverable Hydrocarbons														
TRH C6-C10 minus BTEX (F1)	mg/kg	25	310	180	<25	--	<25	--	<25	<25	<25	<25	<25	--
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	1000	120	<25	--	<25	--	<25	<25	<25	<25	<25	--
TRH >C16-C34 (F3)	mg/kg	90	5000	1300	<90	--	96	--	<90	<90	540	<90	<90	--
TRH >C34-C40 (F4)	mg/kg	120	10000	5600	<120	--	<120	--	<120	<120	650	<120	<120	--
Polycyclic Aromatic Hydrocarbons														
Benzo(a)pyrene	mg/kg	0.1		0.7	<0.1	--	<0.1	--	<0.1	<0.1	0.6	<0.1	<0.1	--
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	40		<0.3	--	<0.3	--	<0.3	<0.3	0.8	<0.3	<0.3	--
Total PAH (18)	mg/kg	0.8	400		<0.8	--	<0.8	--	<0.8	<0.8	6.2	<0.8	<0.8	--
Organochlorine Pesticides														
Total OC VIC EPA	mg/kg	1			<1	--	--	--	--	--	<1	--	--	--
Polychlorinated Biphenyls														
Total PCBs (Arochlors)	mg/kg	1	7		<1	--	--	--	--	--	<1	--	--	--
Heavy Metals														
Arsenic, As	mg/kg	1	3000	160	2	4	2	5	<1	2	3	7	5	6
Cadmium, Cd	mg/kg	0.3	900		<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	3600	310-660	14	22	8.8	25	5.7	8.4	12	18	17	19
Copper, Cu	mg/kg	0.5	240000	85-340	7	4.9	5.1	2.4	1.5	8.1	18	14	6.6	5.4
Lead, Pb	mg/kg	1	1500	1800	12	9	10	15	7	9	8	15	14	16
Nickel, Ni	mg/kg	0.5	600	55-960	4.3	2.2	4.9	2	3.7	5.1	6.6	6.1	4.2	3.6
Zinc, Zn	mg/kg	2	400000	100-2000	32	5.7	37	5.9	24	38	27	24	5.9	6.8
Mercury	mg/kg	0.05	730		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Asbestos														
Asbestos (AS4964 method 0.01%)		0.01			NAD	NA	NAD	NA	NAD	NAD	NA	NAD	NAD	

HILs - Human Health Investigation levels for commercial/industrial land use

EILs - Ecological Investigation levels for commercial/industrial land use

NAD - No Asbestos Detected

-- - Not analysed

Table T3

Soil Analytical Results - Relative Percentage Difference - Endeavour Energy Occupied Area

221-227 And 289-311 Luddenham Road, Orchard Hills, NSW

	Units	LOR	HIL D	EILs	TP808_0.3-0.5	Intra lab duplicate DUP1	RPD
					9/10/2024	9/10/2024	
Heavy Metals							
Arsenic, As	mg/kg	1	3000	160	5	6	18%
Cadmium, Cd	mg/kg	0.3	900		<0.3	<0.3	NA
Chromium, Cr	mg/kg	0.5	3600	310-660	17	19	11%
Copper, Cu	mg/kg	0.5	240000	85-340	6.6	5.4	20%
Lead, Pb	mg/kg	1	1500	1800	14	16	13%
Nickel, Ni	mg/kg	0.5	600	55-960	4.2	3.6	15%
Zinc, Zn	mg/kg	2	400000	100-2000	5.9	6.8	14%
Mercury	mg/kg	0.05	730		<0.05	<0.05	NA
Asbestos							
Asbestos (AS4964 method 0.01%)		0.01			NAD	-	-

HILs - Human Health Investigation levels for commercial/industrial land use

EILs - Ecological Investigation levels for commercial/industrial land use

NAD - No Asbestos Detected

Appendix A

Test pit Logs

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP801

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.817931	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.754477	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 37.36(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.9 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples J	Samples B	Remarks & Other Observations
			GW	Fill: Sandy GRAVEL: medium to coarse sized, fine to medium grained sand, brown grey, road base material.	D	L			
			GW	Fill: GRAVEL: medium to coarse sized, with fine to medium grained sand, brown grey, with sandstone and demolition rubble .	D	MD			
			Cl	CLAY: medium plasticity, orange brown.	W	F			
				TP801 Terminated at 0.9m					

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP802

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.813596	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.752122	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 46.27(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.9 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples J	Samples B	Remarks & Other Observations
			GW	Fill: Sandy GRAVEL: medium to coarse sized, fine to medium grained sand, brown grey, road base material.	D	L			
			GW	Fill: GRAVEL: medium to coarse sized, with fine to medium grained sand, brown grey, with sandstone and demolition rubble .	D	MD			
			Cl	CLAY: medium plasticity, orange brown.	W	F			
				TP802 Terminated at 0.9m					

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP803

UTM	**: 56H**	**Excavator**	**: Hand Tools**	**Job Number**	**: P23.1039.V13**
Latitude	**: -33.817923**	**Excavator Supplier**	**:**	**Client**	**: HB&B Property Pty Ltd**
Longitude	**: 150.754472**	**Logged By**	**: Dilanka Premadasa**	**Project**	**: Contamination Assessment - Endeavour Energy Occupied Area**
Elevation	**: 37.36(m)**	**Reviewed By**	**: RA/NDS**	**Location**	**: 221-227 Luddenham Road, Orchard Hills NSW, Australia**
Total Depth	**: 0.5 m**	**Date**	**: 09/10/2024**	**Loc Comment**	**:**

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples B	Samples J	Remarks & Other Observations
			CI	Fill: Gravelly CLAY: medium plasticity, medium sized gravel, red brown, mixed with road base material and construction materials .	D	F			
			CL-CI	CLAY: low to medium plasticity, dark brown, topsoil.	W	F			
			CI	CLAY: medium plasticity, orange brown.	M	F			
				TP803 Terminated at 0.5m					

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP804

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.813596	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.752122	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 46.27(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.7 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples J	Samples B	Remarks & Other Observations
			GW	Fill: Sandy GRAVEL: medium to coarse sized, fine to medium grained sand, brown grey, road base material.	D	L			
			GW	Fill: GRAVEL: medium to coarse sized, with fine to medium grained sand, brown grey, with sandstone and demo rubble .	D	MD			
			Cl	CLAY: medium plasticity, orange brown.	W	F			
				TP804 Terminated at 0.7m					

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP805

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.818088	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.753891	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 37.61(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.7 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples		Remarks & Other Observations
							J	B	
			GW	Fill: Sandy GRAVEL: medium to coarse sized, fine to medium grained sand, brown grey, road base material.	D	L			
			GW	Fill: GRAVEL: medium to coarse sized, with fine to medium grained sand, brown grey, with sandstone and demolition rubble .	D	MD			
			CI	CLAY: medium plasticity, orange brown.	W	F			
				TP805 Terminated at 0.7m					

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP806

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.818272	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.754000	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 37.58(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.5 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples	Remarks & Other Observations
			Cl	Fill: Gravelly CLAY: medium plasticity, medium sized gravel, red brown, mixed with road base material and construction materials .	D	F		
			Cl	CLAY: medium plasticity, dark brown, topsoil.	M	F		poly bag beneath the fill layer
			Cl	CLAY: medium plasticity, brown.	W	F		
				TP806 Terminated at 0.5m				

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP807

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.813596	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.752122	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 46.27(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.7 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples J	Samples B	Remarks & Other Observations
			GW	Fill: Sandy GRAVEL: medium to coarse sized, fine to medium grained sand, brown grey, with road base material.	D	L			
			CI	Fill: CLAY: medium plasticity, red brown with grey mottled.	M	F			
			CI	CLAY: medium plasticity, brown.	W	F			
				TP807 Terminated at 0.7m					

DEVELOPMENT RISK MANAGEMENT

Testpit No: TP808

UTM	: 56H	**Excavator**	: 5T	**Job Number**	: P23.1039.V13
Latitude	: -33.813596	**Excavator Supplier**	:	**Client**	: HB&B Property Pty Ltd
Longitude	: 150.752122	**Logged By**	: Dilanka Premadasa	**Project**	: Contamination Assessment - Endeavour Energy Occupied Area
Elevation	: 46.27(m)	**Reviewed By**	: RA/NDS	**Location**	: 221-227 Luddenham Road, Orchard Hills NSW, Australia
Total Depth	: 0.5 m	**Date**	: 09/10/2024	**Loc Comment**	:

Drilling Method	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture	Consistency	Samples		Remarks & Other Observations
							B J	DUP	
			Cl	Fill: Gravelly CLAY: medium plasticity, medium sized gravel, red brown, mixed with road base material and construction materials .	D	F			
			Cl	CLAY: medium plasticity, brown.	W	F			
				TP808 Terminated at 0.5m					

Appendix B

Laboratory Analytical Certificates

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – PO BOX 1644 HORNSBY WESTFIELD NSW 1635
PHONE: (02) 9987 2183 FAX: (02)9987 2151 EMAIL: info@ausset.com.au
WEBSITE: www.Ausset.com.au

CHAIN OF CUSTODY RECORD

ASET JOB NO: ASET121735/124915/1-8

Name/ Company Name: DEVELOPMENT Risk Management Pty Ltd (DRM)

Address: 37 Mount Pleasant Avenue, Normanhurst NSW 2076

Contact Ph: 0450 715 562

Contact Name: Nalin De Silva

Job No: DRM P23.1039.V13

Project Name: EE, Orchard Hills

Purchase Order:

Email Results to: rahabar_alam@drm.ltd
results@drm.ltd

	Sample ID	Date	Type	Container	Sample Location	Asbestos in Material	Asbestos in Soil (+/-)	Asbestos WA/ NEPM 500mL	Asbestos Fibre Count	Asbestos in Water	Asbestos in Dust	Lead Analysis
1	TP801 0.3 - 0.8	9/10/2024	S	500ml Bag				X				
2	TP802 0.3 - 0.8	9/10/2024	S	500ml Bag				X				
3	TP803 0.1 - 0.3	9/10/2024	S	500ml Bag								
4	TP804 0.3 - 0.6	9/10/2024	S	500ml Bag				X				
5	TP805 0.3 - 0.6	9/10/2024	S	500ml Bag				X				
6	TP806 0.2 - 0.4	9/10/2024	S	500ml Bag								
7	TP807 0.3 - 0.5	9/10/2024	S	500ml Bag				X				
8	TP808 0.3 - 0.5	9/10/2024	S	500ml Bag				X				

		Turn around time					Shipment Method
Relinquished By: Dilanka Premadasa	Received By: SP	Same Day	24 hrs	48 hrs	3 Days	5 days	
Date & Time: 10/10/2024	Date & Time: 2:25 PM 10/10/24		X			2	
Signature:	Signature:						

RECEIVED
10 OCT 2024
SP

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET121735 / 124915 / 1 – 6
Your ref : DRM P23.1039.V13 – EE, Orchard Hills
NATA Accreditation No: 14484

14 October 2024

Development Risk Management Pty Ltd
37 Mount Pleasant Avenue
Normanhurst NSW 2076

Accredited for compliance with ISO/IEC 17025 - Testing.

Attn: Mr Nalin De Silva

Dear Nalin

Asbestos Identification
This report presents the results of six samples, forwarded by Development Risk Management Pty Ltd on 10 October 2024, for analysis for asbestos.

1.Introduction: Six samples forwarded were examined and analysed for the presence of asbestos on 11 October 2024.

2. Methods: The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Australian Standard AS 4964 - 2004 and Safer Environment Method 1 as the supplementary work instruction) (Qualitative Analysis only).**

The report also provides approximate weights and percentages, categories of asbestos forms appearing in the sample, such as **AF** (Asbestos Fines), **FA** (Friable Asbestos) and **ACM** (Asbestos Containing Material), also satisfying the requirements of the NEPM Guidelines.

3. Results : **Sample No. 1. ASET121735 / 124915 / 1. TP801 - 0.3 - 0.8.**
Approx dimensions 10.0 cm x 10.0 cm x 9.6 cm
Approximate total dry weight of soil = 1181.0 g.
The sample consisted of a mixture of sandy soil, stone, sandstone, brick-like pieces, plant matter and organic fibres.
No asbestos detected.

Sample No. 2. ASET121735 / 124915 / 2. TP802 - 0.3 - 0.8.
Approx dimensions 10.0 cm x 10.0 cm x 9.9 cm
Approximate total dry weight of soil = 1245.0 g.
The sample consisted of a mixture of sandy soil, stone, sandstone, brick-like pieces, glass pieces, plant matter and organic fibres.
No asbestos detected.

Sample No. 3. ASET121735 / 124915 / 3. TP804 - 0.3 - 0.6.
Approx dimensions 10.0 cm x 10.0 cm x 9.5 cm
Approximate total dry weight of soil = 1151.0 g.
The sample consisted of a mixture of sandy soil, stone, sandstone, brick-like pieces, plant matter and organic fibres.
No asbestos detected.

Sample No. 4. ASET121735 / 124915 / 4. TP805 - 0.3 - 0.6.
Approx dimensions 10.0 cm x 10.0 cm x 9.6 cm
Approximate total dry weight of soil = 1179.0 g.
The sample consisted of a mixture of sandy soil, stone, sandstone, plant matter and organic fibres.
No asbestos detected.

Sample No. 5. ASET121735 / 124915 / 5. TP807 - 0.3 - 0.5.
Approx dimensions 10.0 cm x 10.0 cm x 8.3 cm
Approximate total dry weight of soil = 921.0 g.
The sample consisted of a mixture of clayish sandy soil, stone, sandstone, plant matter and organic fibres.
No asbestos detected.

Sample No. 6. ASET121735 / 124915 / 6. TP808 - 0.3 - 0.5.
Approx dimensions 10.0 cm x 10.0 cm x 7.4 cm
Approximate total dry weight of soil = 825.0 g.
The sample consisted of a mixture of clayish sandy soil, stone, sandstone, plant matter and organic fibres.
No asbestos detected.

Reported by,

Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory

NATA
WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia and it also satisfies the requirements of the current NEPM Guidelines. NATA Accreditation does not cover the performance of this service.

Disclaimers;

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos, as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation only covers the qualitative part of the results reported. This weight disclaimer also covers weight / weight percentages if given.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF **-Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.**

FA **-Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.**

^ denotes loose fibres of relevant asbestos types detected in soil/dust.
*** denotes asbestos detected in ACM in bonded form.**
 # denotes friable asbestos as soft fibro plaster, fragments of ACM smaller than 7mm which are considered as friable and / or highly weathered ACM that will easily crumble.
λ denotes samples that have been analysed only in accordance to AS 4964 – 2004.
Ω Sample volume criteria of 500mL have not been satisfied.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative. Results indicating "No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by A4964-2004. Trace / respirable level asbestos will be reported only when detected and trace analysis have been performed on each sample as required by AS4964-2004. When loose asbestos fibres/ fibre bundles are detected and reported that means they are larger handpicked fibres/ fibre bundles, and they do not represent respirable fibres. Dust/soil samples are always subjected to trace analysis except where the amounts involved are extremely minute and trace analysis is not possible to be carried out. When trace analysis is not performed on dust samples it will be indicated in the report that trace analysis has not been carried out due to the volume of the sample being extremely minute.

Estimation of asbestos weights involves the use of following assumptions;
Volume of each kind of Asbestos present in broken edges have been visually estimated and its been assumed that volumes remain similar throughout the binding matrix and those volumes are only approximate and not exact. Material densities have been assumed to be similar to commonly found similar materials and may not be exact.

All samples indicating "No asbestos detected" are assumed to be less than 0.001% for friable AF and FA portions detected and 0.01 % for ACM detected unless the approximate weight is given.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Rahabar Alam
Client	DEVELOPMENT RISK MANAGEMENT PTY LTD
Address	37 MOUNT PLEASANT AVENUE NORMANHURST NSW 2076
Telephone	(Not specified)
Facsimile	(Not specified)
Email	rahabar_alam@drm.ltd
Project	**DRM P23.1039.V13-Orchard Hills**
Order Number	**DRM P23.1039.V13**
Samples	10

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE272259 R0**
Date Received	9/10/2024
Date Reported	15/10/2024

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Laboratory Manager

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	**180**
TRH C29-C36	mg/kg	45	**54**	**68**	<45	<45	**520**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	**500**
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	**96**	<90	<90	**540**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	**650**
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	**700**
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	**1200**

PARAMETER	UOM	LOR	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.5**
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Fluoranthene	mg/kg	0.1	<0.1	**0.2**	<0.1	<0.1	**1.1**
Pyrene	mg/kg	0.1	<0.1	**0.2**	<0.1	<0.1	**1.2**
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.4**
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.5**
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.6**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.6**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.5**
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**0.7**
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	**0.8**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**0.8**
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**6.2**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**6.2**

PARAMETER	UOM	LOR	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	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	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1

PCBs in Soil [AN420] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007
Arochlor 1016	mg/kg	0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP801_0.8-0.9 SOIL - 9/10/2024 SE272259.002	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP803_0.1-0.3 SOIL - 9/10/2024 SE272259.004	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005
Arsenic, As	mg/kg	1	2	4	2	5	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	22	8.8	25	5.7
Copper, Cu	mg/kg	0.5	7.0	4.9	5.1	2.4	1.5
Lead, Pb	mg/kg	1	12	9	10	15	7
Nickel, Ni	mg/kg	0.5	4.3	2.2	4.9	2.0	3.7
Zinc, Zn	mg/kg	2	32	5.7	37	5.9	24

PARAMETER	UOM	LOR	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009	DUP1 SOIL - 9/10/2024 SE272259.010
Arsenic, As	mg/kg	1	2	3	7	5	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	8.4	12	18	17	19
Copper, Cu	mg/kg	0.5	8.1	18	14	6.6	5.4
Lead, Pb	mg/kg	1	9	8	15	14	16
Nickel, Ni	mg/kg	0.5	5.1	6.6	6.1	4.2	3.6
Zinc, Zn	mg/kg	2	38	27	24	5.9	6.8

Mercury in Soil [AN312] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP801_0.8-0.9 SOIL - 9/10/2024 SE272259.002	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP803_0.1-0.3 SOIL - 9/10/2024 SE272259.004	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009	DUP1 SOIL - 9/10/2024 SE272259.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 10/10/2024

PARAMETER	UOM	LOR	TP801_0.3-0.5 SOIL - 9/10/2024 SE272259.001	TP801_0.8-0.9 SOIL - 9/10/2024 SE272259.002	TP802_0.6-0.8 SOIL - 9/10/2024 SE272259.003	TP803_0.1-0.3 SOIL - 9/10/2024 SE272259.004	TP804_0.4-0.6 SOIL - 9/10/2024 SE272259.005
% Moisture	%w/w	1	5.3	9.4	7.2	14.4	18.5

PARAMETER	UOM	LOR	TP805_0.3-0.5 SOIL - 9/10/2024 SE272259.006	TP806_0.2-0.4 SOIL - 9/10/2024 SE272259.007	TP807_0.3-0.5 SOIL - 9/10/2024 SE272259.008	TP808_0.3-0.5 SOIL - 9/10/2024 SE272259.009	DUP1 SOIL - 9/10/2024 SE272259.010
% Moisture	%w/w	1	5.3	12.3	12.4	18.6	19.4

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.
Note that in terms of units of radioactivity:

a. 1 Bq is equivalent to 27 pCi
b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE272259 R0

CLIENT DETAILS

Contact	Rahabar Alam
Client	DEVELOPMENT RISK MANAGEMENT PTY LTD
Address	37 MOUNT PLEASANT AVENUE NORMANHURST NSW 2076
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Email	rahabar_alam@drm.ltd
Project	**DRM P23.1039.V13-Orchard Hills**
Order Number	**DRM P23.1039.V13**
Samples	10

LABORATORY DETAILS

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SGS Reference	**SE272259 R0**
Date Received	09 Oct 2024
Date Reported	15 Oct 2024

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
	TRH (Total Recoverable Hydrocarbons) in Soil	4 items

SAMPLE SUMMARY

Sample counts by matrix	10 Soil	Type of documentation received	COC
Date documentation received	9/10/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE272259 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP801_0.8-0.9	SE272259.002	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP803_0.1-0.3	SE272259.004	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024
DUP1	SE272259.010	LB326369	09 Oct 2024	09 Oct 2024	06 Nov 2024	10 Oct 2024	06 Nov 2024	14 Oct 2024

Moisture Content — Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP801_0.8-0.9	SE272259.002	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP803_0.1-0.3	SE272259.004	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024
DUP1	SE272259.010	LB326378	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	15 Oct 2024	14 Oct 2024

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	14 Oct 2024

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP801_0.8-0.9	SE272259.002	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP803_0.1-0.3	SE272259.004	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024

HOLDING TIME SUMMARY

SE272259 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued) — Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP806_0.2-0.4	SE272259.007	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024
DUP1	SE272259.010	LB326367	09 Oct 2024	09 Oct 2024	07 Apr 2025	10 Oct 2024	07 Apr 2025	14 Oct 2024

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326362	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	19 Nov 2024	15 Oct 2024

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
TP801_0.3-0.5	SE272259.001	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP802_0.6-0.8	SE272259.003	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP804_0.4-0.6	SE272259.005	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP805_0.3-0.5	SE272259.006	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP806_0.2-0.4	SE272259.007	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP807_0.3-0.5	SE272259.008	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024
TP808_0.3-0.5	SE272259.009	LB326363	09 Oct 2024	09 Oct 2024	23 Oct 2024	10 Oct 2024	23 Oct 2024	14 Oct 2024

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	105
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	118

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	TP801_0.3-0.5	SE272259.001	%	70 - 130%	106
	TP802_0.6-0.8	SE272259.003	%	70 - 130%	104
	TP804_0.4-0.6	SE272259.005	%	70 - 130%	101
	TP805_0.3-0.5	SE272259.006	%	70 - 130%	95
	TP806_0.2-0.4	SE272259.007	%	70 - 130%	96
	TP807_0.3-0.5	SE272259.008	%	70 - 130%	98
	TP808_0.3-0.5	SE272259.009	%	70 - 130%	100
d14-p-terphenyl (Surrogate)	TP801_0.3-0.5	SE272259.001	%	70 - 130%	105
	TP802_0.6-0.8	SE272259.003	%	70 - 130%	105
	TP804_0.4-0.6	SE272259.005	%	70 - 130%	97
	TP805_0.3-0.5	SE272259.006	%	70 - 130%	93
	TP806_0.2-0.4	SE272259.007	%	70 - 130%	98
	TP807_0.3-0.5	SE272259.008	%	70 - 130%	99
	TP808_0.3-0.5	SE272259.009	%	70 - 130%	100
d5-nitrobenzene (Surrogate)	TP801_0.3-0.5	SE272259.001	%	70 - 130%	106
	TP802_0.6-0.8	SE272259.003	%	70 - 130%	111
	TP804_0.4-0.6	SE272259.005	%	70 - 130%	104
	TP805_0.3-0.5	SE272259.006	%	70 - 130%	98
	TP806_0.2-0.4	SE272259.007	%	70 - 130%	102
	TP807_0.3-0.5	SE272259.008	%	70 - 130%	102
	TP808_0.3-0.5	SE272259.009	%	70 - 130%	102

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	102
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	115

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	80
	TP802_0.6-0.8	SE272259.003	%	60 - 130%	72
	TP804_0.4-0.6	SE272259.005	%	60 - 130%	79
	TP805_0.3-0.5	SE272259.006	%	60 - 130%	83
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	85
	TP807_0.3-0.5	SE272259.008	%	60 - 130%	94
	TP808_0.3-0.5	SE272259.009	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	75
	TP802_0.6-0.8	SE272259.003	%	60 - 130%	70
	TP804_0.4-0.6	SE272259.005	%	60 - 130%	76
	TP805_0.3-0.5	SE272259.006	%	60 - 130%	78
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	82
	TP807_0.3-0.5	SE272259.008	%	60 - 130%	89
	TP808_0.3-0.5	SE272259.009	%	60 - 130%	73
d8-toluene (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	79
	TP802_0.6-0.8	SE272259.003	%	60 - 130%	74
	TP804_0.4-0.6	SE272259.005	%	60 - 130%	79
	TP805_0.3-0.5	SE272259.006	%	60 - 130%	83
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	84
	TP807_0.3-0.5	SE272259.008	%	60 - 130%	91
	TP808_0.3-0.5	SE272259.009	%	60 - 130%	75

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	80
	TP802_0.6-0.8	SE272259.003	%	60 - 130%	72
	TP804_0.4-0.6	SE272259.005	%	60 - 130%	79
	TP805_0.3-0.5	SE272259.006	%	60 - 130%	83

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN133

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	TP806_0.2-0.4	SE272259.007	%	60 - 130%	85
	TP807_0.3-0.5	SE272259.008	%	60 - 130%	94
	TP808_0.3-0.5	SE272259.009	%	60 - 130%	79
d4-1,2-dichloroethane (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	75
	TP802_0.6-0.8	SE272259.003	%	60 - 130%	70
	TP804_0.4-0.6	SE272259.005	%	60 - 130%	76
	TP805_0.3-0.5	SE272259.006	%	60 - 130%	78
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	82
	TP807_0.3-0.5	SE272259.008	%	60 - 130%	89
	TP808_0.3-0.5	SE272259.009	%	60 - 130%	73
d8-toluene (Surrogate)	TP801_0.3-0.5	SE272259.001	%	60 - 130%	79
	TP802_0.6-0.8	SE272259.003	%	60 - 130%	74
	TP804_0.4-0.6	SE272259.005	%	60 - 130%	79
	TP805_0.3-0.5	SE272259.006	%	60 - 130%	83
	TP806_0.2-0.4	SE272259.007	%	60 - 130%	84
	TP807_0.3-0.5	SE272259.008	%	60 - 130%	91
	TP808_0.3-0.5	SE272259.009	%	60 - 130%	75

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB326369.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB326362.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	94

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB326362.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	107
		2-fluorobiphenyl (Surrogate)	%	-	104
		d14-p-terphenyl (Surrogate)	%	-	105

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB326362.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PCBs in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB326362.001		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	91

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result
LB326367.001		Arsenic, As	mg/kg	1	<1
		Cadmium, Cd	mg/kg	0.3	<0.3
		Chromium, Cr	mg/kg	0.5	<0.5
		Copper, Cu	mg/kg	0.5	<0.5
		Nickel, Ni	mg/kg	0.5	<0.5
		Lead, Pb	mg/kg	1	<1
		Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result
LB326362.001		TRH C10-C14	mg/kg	20	<20
		TRH C15-C28	mg/kg	45	<45
		TRH C29-C36	mg/kg	45	<45
		TRH C37-C40	mg/kg	100	<100
		TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB326363.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	87
		d8-toluene (Surrogate)	%	-	93
		Bromofluorobenzene (Surrogate)	%	-	100
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB326363.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	87

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.002	LB326369.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE272259.010	LB326369.023	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content — Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.007	LB326378.022	% Moisture	%w/w	1	12.3	13.2	38	7
SE272259.010	LB326378.026	% Moisture	%w/w	1	19.4	18.4	35	5
SE272329.007	LB326378.011	% Moisture	%w/w	1	14.5	14.8	37	2

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.007	LB326362.030	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.18	0.17	30	6

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.007	LB326362.030	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	0.1	129	32
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	0.5	0.5	52	1
		Anthracene	mg/kg	0.1	0.2	0.2	76	30
		Fluoranthene	mg/kg	0.1	1.1	1.1	39	1
		Pyrene	mg/kg	0.1	1.2	1.2	39	0
		Benzo(a)anthracene	mg/kg	0.1	0.4	0.4	54	2
		Chrysene	mg/kg	0.1	0.5	0.4	50	23
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.6	0.6	46	1
		Benzo(k)fluoranthene	mg/kg	0.1	0.3	0.3	67	4
		Benzo(a)pyrene	mg/kg	0.1	0.6	0.6	48	4
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.3	0.3	61	10

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued) — Method: ME-(AU)-[ENV]AN120

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.007	LB326362.030		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.5	0.5	52	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0.7	0.7	37	3
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.8	0.8	35	2
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.8	0.8	46	2
			Total PAH (18)	mg/kg	0.8	6.2	6.2	32	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
SE272259.009	LB326362.027		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.6	30	9
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	10

PCBs in Soil — Method: ME-(AU)-[ENV]AN120

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.007	LB326362.031		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	6

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.002	LB326367.014	Arsenic, As	mg/kg	1	4	6	50	30
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	22	28	32	27
		Copper, Cu	mg/kg	0.5	4.9	4.5	41	8
		Nickel, Ni	mg/kg	0.5	2.2	2.3	52	5
		Lead, Pb	mg/kg	1	9	11	40	17
		Zinc, Zn	mg/kg	2	5.7	5.5	66	3
SE272259.010	LB326367.023	Arsenic, As	mg/kg	1	6	6	47	14
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	19	15	33	20
		Copper, Cu	mg/kg	0.5	5.4	6.8	38	23

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued) — Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.010	LB326367.023		Nickel, Ni	mg/kg	0.5	3.6	4.3	43	19
			Lead, Pb	mg/kg	1	16	22	35	32
			Zinc, Zn	mg/kg	2	6.8	6.0	61	13

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.007	LB326362.030		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	180	230	52	27
			TRH C29-C36	mg/kg	45	520	600	38	14
			TRH C37-C40	mg/kg	100	500	560	49	11
			TRH C10-C36 Total	mg/kg	110	700	830	44	18
			TRH >C10-C40 Total (F bands)	mg/kg	210	1200	1400	46	15
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	170	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	540	650	45	18
			TRH >C34-C40 (F4)	mg/kg	120	650	740	47	12
SE272259.009	LB326362.027		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOCs in Soil — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.005	LB326363.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	8.2	50	8
			d8-toluene (Surrogate)	mg/kg	-	7.9	8.4	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	8.4	50	6
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE272259.009	LB326363.019	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.3	7.7	50	5
			d8-toluene (Surrogate)	mg/kg	-	7.5	8.0	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	7.8	50	1
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.005	LB326363.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	8.2	50	8
			d8-toluene (Surrogate)	mg/kg	-	7.9	8.4	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	8.4	50	6
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE272259.009	LB326363.019		TRH C6-C10	mg/kg	25	<25	<25	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Volatile Petroleum Hydrocarbons in Soil (continued) Method: ME-(AU)-[ENV]AN133

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE272259.009	LB326363.019		TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.3	7.7	50	5
			d8-toluene (Surrogate)	mg/kg	-	7.5	8.0	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	7.8	50	1
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326369.002		Mercury	mg/kg	0.05	0.20	0.2	80 - 120	101

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326362.002		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	92
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	86
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	86
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	84
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	83
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	86
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	98

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326362.002		Naphthalene	mg/kg	0.1	4.7	4	60 - 140	117
		Acenaphthylene	mg/kg	0.1	5.0	4	60 - 140	125
		Acenaphthene	mg/kg	0.1	4.5	4	60 - 140	113
		Phenanthrene	mg/kg	0.1	4.6	4	60 - 140	114
		Anthracene	mg/kg	0.1	5.0	4	60 - 140	126
		Fluoranthene	mg/kg	0.1	4.4	4	60 - 140	110
		Pyrene	mg/kg	0.1	4.2	4	60 - 140	106
		Benzo(a)pyrene	mg/kg	0.1	5.5	4	60 - 140	137
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	102
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	109
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	70 - 130	91

PCBs in Soil — Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326362.002		Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	112

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326367.002		Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
		Cadmium, Cd	mg/kg	0.3	3.9	4.81	70 - 130	81
		Chromium, Cr	mg/kg	0.5	45	38.31	80 - 120	117
		Copper, Cu	mg/kg	0.5	290	290	80 - 120	99
		Nickel, Ni	mg/kg	0.5	170	187	80 - 120	91
		Lead, Pb	mg/kg	1	93	89.9	80 - 120	104
		Zinc, Zn	mg/kg	2	280	273	80 - 120	102

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326362.002		TRH C10-C14	mg/kg	20	50	40	60 - 140	124
		TRH C15-C28	mg/kg	45	46	40	60 - 140	115
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	89
	TRH F Bands	TRH >C10-C16	mg/kg	25	49	40	60 - 140	123
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	101
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90

VOC's in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326363.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.8	5	60 - 140	76
		Toluene	mg/kg	0.1	3.9	5	60 - 140	78
		Ethylbenzene	mg/kg	0.1	4.1	5	60 - 140	82
		m/p-xylene	mg/kg	0.2	8.0	10	60 - 140	80
		o-xylene	mg/kg	0.1	4.2	5	60 - 140	84

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN133

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB326363.002		TRH C6-C10	mg/kg	25	68	92.5	60 - 140	73
		TRH C6-C9	mg/kg	20	59	80	60 - 140	74
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	44	62.5	60 - 140	70

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil — Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326369.004	Mercury	mg/kg	0.05	0.31	0.12	0.2	94

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326362.004		Naphthalene	mg/kg	0.1	4.6	<0.1	4	114
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.9	0.2	4	118
			Acenaphthene	mg/kg	0.1	4.2	<0.1	4	104
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	5.2	1.3	4	98
			Anthracene	mg/kg	0.1	5.0	0.5	4	112
			Fluoranthene	mg/kg	0.1	6.4	3.5	4	73
			Pyrene	mg/kg	0.1	6.3	3.3	4	75
			Benzo(a)anthracene	mg/kg	0.1	1.1	1.5	-	-
			Chrysene	mg/kg	0.1	1.2	1.7	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	1.8	2.3	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	0.8	0.9	-	-
			Benzo(a)pyrene	mg/kg	0.1	6.6	2.1	4	112
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.9	1.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	0.2	0.3	-	-
			Benzo(ghi)perylene	mg/kg	0.1	0.9	1.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	7.3	3.0	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	7.3	3.0	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	7.3	3.0	-	-
			Total PAH (18)	mg/kg	0.8	50	20	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	105
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	109
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	93

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES — Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326367.004	Arsenic, As	mg/kg	1	59	8	50	102
		Cadmium, Cd	mg/kg	0.3	46	0.3	50	91
		Chromium, Cr	mg/kg	0.5	63	9.8	50	107
		Copper, Cu	mg/kg	0.5	110	66	50	89
		Nickel, Ni	mg/kg	0.5	53	6.2	50	93
		Lead, Pb	mg/kg	1	260	240	50	54 ⑤
		Zinc, Zn	mg/kg	2	360	300	50	104

TRH (Total Recoverable Hydrocarbons) in Soil — Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326362.004		TRH C10-C14	mg/kg	20	87	22	40	161 ⑨
			TRH C15-C28	mg/kg	45	290	200	40	232 ⑨
			TRH C29-C36	mg/kg	45	320	270	40	124
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	690	480	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	720	550	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	98	33	40	163 ⑨
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	98	33	-	-
			TRH >C16-C34 (F3)	mg/kg	90	450	370	40	196 ⑨
			TRH >C34-C40 (F4)	mg/kg	120	180	140	-	-

VOC s in Soil — Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326363.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.2	<0.1	5	65
			Toluene	mg/kg	0.1	3.4	<0.1	5	67
			Ethylbenzene	mg/kg	0.1	3.5	<0.1	5	71
			m/p-xylene	mg/kg	0.2	7.0	<0.2	10	69
			o-xylene	mg/kg	0.1	3.6	<0.1	5	72

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Soil (continued) Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326363.004	Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.9	7.9	-	109
			d8-toluene (Surrogate)	mg/kg	-	9.2	7.2	-	92
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	6.1	-	99
		Totals	Total BTEX*	mg/kg	0.6	21	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	11	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE272322.001	LB326363.004		TRH C6-C10	mg/kg	25	64	<25	92.5	67
			TRH C6-C9	mg/kg	20	55	<20	80	67
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.9	7.9	-	109
			d8-toluene (Surrogate)	mg/kg	-	9.2	7.2	-	92
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.9	6.1	-	99
		VPH F	Benzene (F0)	mg/kg	0.1	3.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	43	<25	62.5	66

MATRIX SPIKE DUPLICATES

SE272259 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: https://www.sgs.com.au/~/media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022 QA QC Plan.pdf

*	NATA accreditation does not cover the performance of this service.
**	Indicative data, theoretical holding time exceeded.
***	Indicates that both * and ** apply.
-	Sample not analysed for this analyte.
IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.
①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to relevant report comments for further information.

#UNKNOWN!

CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services Sydney
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplereceipt.sydney@sgs.com

Company Name:	**Development Risk Management**	Project Name/No:	**DRM P23.1039.V13 - Orchard Hills**
Address:	Suite 7, 265-271 Pennant Hills Road Thornleigh, NSW 2120	Purchase Order No:	NA
		Results Required By:	**Results by COB 16 October (5-day)**
		Telephone:	**0450 356 834**
Contact Name:	**RAHABAR ALAM**	Facsimile:	**NA**
		Email Results:	**results@drm.ltd** **RAHABAR_ALAM@DRM.LTD**

Relinquished By: **DILANKA PREMADASA**	Date/Time: **9/10/2024** Courier Ref: **QM7496**	Received By:	Date/Time 9/10/24 @ 5:10pm
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: Yes/ No	Temperature: Ambient / Chilled 4.8°C ICE	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No: **1772515 and 1654186V2**

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	ASS bags	Jar samples	DRM1 TRH/ BTEXN/ PAH/ 8 Metals	DRM8 CL2T 8 Metals (Total)	DRM3A TRH/ BTEXN/ PAH/ OC/ PCB/ 8 Metals	PAH	COMMENTS
TP801 _ 0.3 - 0.5	9/10/2024	1		X			1			X		
TP801 _ 0.8 - 0.9	9/10/2024	2		X			1		X			
TP802 _ 0.6 - 0.8	9/10/2024	3		X			1	X				
TP803 _ 0.1 - 0.3	9/10/2024	4		X			1		X			
TP804 _ 0.4 - 0.6	9/10/2024	5		X			1	X				
TP804 _ 0.6 - 0.7	9/10/2024			X			1					
TP805 _ 0.3 - 0.5	9/10/2024	6		X			1	X				
TP806 _ 0.2 - 0.4	9/10/2024	7		X			1			X		
TP807 _ 0.3 - 0.5	9/10/2024	8		X			1	X				
TP807 _ 0.5 - 0.7	9/10/2024			X			1					
TP808 _ 0.3 - 0.5	9/10/2024	9		X			1	X				
DUP1	9/10/2024	10		X			1		X			
DUP1A	9/10/2024	~~11~~		X			1					Hold

SGS EHS Sydney COC
SE272259

SAMPLE RECEIPT ADVICE

SE272259

CLIENT DETAILS

Contact	Rahabar Alam
Client	DEVELOPMENT RISK MANAGEMENT PTY LTD
Address	37 MOUNT PLEASANT AVENUE NORMANHURST NSW 2076
Telephone	(Not specified)
Facsimile	(Not specified)
Email	rahabar_alam@drm.ltd
Project	**DRM P23.1039.V13-Orchard Hills**
Order Number	**DRM P23.1039.V13**
Samples	10

LABORATORY DETAILS

Manager	Shane McDermott
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 9/10/2024
Report Due	Wed 16/10/2024
SGS Reference	**SE272259**

SUBMISSION DETAILS

This is to confirm that 10 samples were received on Wednesday 9/10/2024. Results are expected to be ready by COB Wednesday 16/10/2024. Please quote SGS reference SE272259 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	10 Soil	Type of documentation received	COC
Date documentation received	9/10/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

3 Jars on Hold.

SAMPLE RECEIPT ADVICE

SE272259

CLIENT DETAILS

Client DEVELOPMENT RISK MANAGEMENT PTY LTD

Project DRM P23.1039.V13-Orchard Hills

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	TP801_0.3-0.5	30	26	11	7	10	11	7
002	TP801_0.8-0.9	-	-	-	7	-	-	-
003	TP802_0.6-0.8	-	26	-	7	10	11	7
004	TP803_0.1-0.3	-	-	-	7	-	-	-
005	TP804_0.4-0.6	-	26	-	7	10	11	7
006	TP805_0.3-0.5	-	26	-	7	10	11	7
007	TP806 0.2-0.4	30	26	11	7	10	11	7
008	TP807_0.3-0.5	-	26	-	7	10	11	7
009	TP808_0.3-0.5	-	26	-	7	10	11	7
010	DUP1	-	-	-	7	-	-	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE272259

CLIENT DETAILS

Client DEVELOPMENT RISK MANAGEMENT PTY LTD

Project DRM P23.1039.V13-Orchard Hills

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content
001	TP801_0.3-0.5	1	1
002	TP801_0.8-0.9	1	1
003	TP802_0.6-0.8	1	1
004	TP803_0.1-0.3	1	1
005	TP804_0.4-0.6	1	1
006	TP805_0.3-0.5	1	1
007	TP806_0.2-0.4	1	1
008	TP807_0.3-0.5	1	1
009	TP808_0.3-0.5	1	1
010	DUP1	1	1

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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Testing as per this table shall commence immediately unless the client intervenes with a correction .

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