



Detailed Site Investigation

230 Martin Road, Badgerys Creek, NSW, 2555

Prepared for: EMKC³

EP3390.001_v5 | 1 May 2026



230 Martin Road - SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS Matrix

Table 1 below sets out the Secretary's Environmental Assessment Requirements (SEARs) for the project. A consultant is identified against each SEAR matter. Each identified consultant will be responsible for addressing the relevant matter as part of the preparation of the State Significant Development Application (SSDA).

Table 2 sets out the additional Agency requirements and the consultant responsible for addressing these as part of the SSDA.

Table 1 SEARs requirements and responsible consultant

Item / Description	Responsibility
General Requirements	
Contamination - a site contamination assessment in accordance with the Managing Land Contamination Planning Guidelines: SEPP 55 – Remediation of Land (DUAP, 1998), including characterisation of the nature and extent of any contamination on the site and surrounding area.	Sections 9.1, 11

Table 2 Agency requirements and responsible consultant

Item / Description	Document Reference
Department of Planning and Environment (Biodiversity and Conservation)	
Liverpool City Council	
5. <u>Environmental Health</u> 1. Site Contamination 1. A stage 1 preliminary site assessment must be carried out by a suitably qualified environmental consultant The preliminary site investigation is to comply with guidelines made or approved by the NSW EPA under the Contaminated Land management Act 1997 and identify all past and present potentially contaminating activities; identify potential contamination types; discuss the site condition; provide a preliminary assessment of site contamination; and assess the need for further investigations.	EP3390.001_DSI

2. If contaminating activities are suspected or known to have occurred, or if the site history is incomplete it may be necessary to prepare a Stage 2 – Detailed Site Investigation. This investigation shall give regard to the potential effects of any contaminants on public health, the environment and building structures and shall meet the sampling density outlined in the NSW EPA Contaminated Sites Sampling Design Guidelines (1995).

Where the Stage 2-Detailed Site Investigation indicates that the site poses unacceptable risks to human health or the environment, a Remedial Action Plan (RAP) shall be prepared by a suitably qualified and experienced Contaminated Land Consultant in accordance with applicable guidelines made or approved by the NSW EPA under the Contaminated Land Management Act 1997. In these circumstances, the Remedial Action Plan shall be referred to Liverpool City Council for review.

Note: 'Suitably qualified and experienced contaminated land consultant' means someone who is certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) Scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) Scheme.

The report's cover or title page of the document shall include a personalised electronic seal for either the CEnvP(SC) or CPSS CSAM scheme.

Detailed Site Investigation

230 Martin Road, Badgerys Creek, NSW

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1 May 2026

Our Ref: EP3390.001

LIMITATIONS

This Detailed Site Investigation was conducted on the behalf of EMKC³ Pty Ltd for the purpose/s stated in **Section 1**.

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It is not possible in a Detailed Site Investigation to present all data, which could be of interest to all readers of this report. Readers are referred to any referenced investigation reports for further data.

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Version	Author	Date	Reviewer	Date	Quality Review	Date
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Executive Summary

Introduction

This Detailed Site Investigation (DSI) has been prepared by EP Risk Management Pty Ltd (EP Risk) to accompany a State Significant Development Application (SSDA) for the proposed development of at 230 Martin Road, Badgerys Creek, NSW, 2555 (the Site). The Site is legally described as Lot A in Deposited Plan (DP) 406215 and covers a total area of approximately 24.28 hectares (ha).

EP Risk was engaged by EMKC³ Pty Ltd (EMKC³) to undertake a DSI prior to submission of the SSDA and assess whether the land is suitable for the proposed Industrial land use at the Site and to address the requirements of section 5.2, “Environmental Health – Site Contamination”, of the Planning Secretary’s Environmental Assessment Requirements (SEARs) for the Site as requested by Liverpool City Council (LCC). The location and boundary of the Site is shown in **Figure 1**.

The proposal seeks approval for two (2) contemporary warehouse or distribution centre buildings at 230 Martin Road, Badgerys Creek. The Development will comprise:

- Site clearance works, including the removal of existing structures
- Bulk earthworks and the installation and augmentation of utilities infrastructure and other services
- Construction and operational use of two warehouse or distribution centres containing ancillary manufacturing use in the proposed Lot 1 building with associated parking, landscaping across the site and access
- Other ancillary works including stormwater infrastructure (excluding works to be delivered by public authorities e.g., Park Edge Street and the Regional Stormwater Infrastructure basin) and delivery of the frontage upgrade of along Martin Road to facilitate access to the site.

It is understood the proposed development will comprise an area of approximately 8 ha within the Site and is situated predominantly to the western portion (Assessment Area) zoned as ENT: Enterprise and the eastern section is currently zoned as ENZ: Environment and Recreation will undertake tree planting.

Objective

The objective of the proposed works was to supplement the existing assessments outlined in **Section 3.3** and prepare a DSI for the Assessment Area, to assess the contamination status and examine if the Assessment Area is suitable for the proposed development and meet LCC’s requirements in section 5.2 in the SEARs for the Site.

Summary of Findings

The summary of findings of the DSI are as follows:

- As of **06 December 2023**, surrounding land uses comprised of various rural and agricultural properties. Immediately north is a composting facility and south creek runs the length of the Site on the eastern boundary.
- Based on the review of the historical information, the Site was formerly used for agricultural purposes. Since the adjacent Australian Native Landscapes (ANL) composting facility site to the north began operations between 1991 and 2005, a small dam in the central northern portion of the Site developed and gradually increased to its current size of approximately 50 m in length and width. Surface water generated on Site was anticipated to flow into the on-site dam or to Badgerys Creek to the east.
- In general, the subsurface conditions comprised:

- 0 – 0.1 metres below ground level (mBGL): Surface condition: Grass cover
- 0 – 0.3 mBGL: FILL: clayey sand/silty sand / silty sandy clay / gravelly sand
- 0 – 2.0 mBGL: NATURAL: silty CLAY/ sandy CLAY / CLAY,
- Concentrations of contaminants of potential concern (CoPC) within soil samples analysed were reported below the adopted human health and ecological criteria and / or laboratory limit of reporting (LOR).
- No Asbestos containing material (ACM) was observed on the surface or during intrusive investigations. Asbestos in soils concentrations were reported below the laboratory Limit of Reporting (LOR) in all soil samples analysed.
- Based on the results of the salinity testing, the Site is characterised by non-saline to very saline soils. Furthermore, the results indicate the salinity predominantly increases with depth across the Site.

Conclusion and Recommendations

Overall, based on the assessment and refined CSM (conceptual site model) the Assessment Area is considered suitable for the proposed development. This investigation did not identify human health or ecological risks to current or future receptors within the Assessment Area. It is noted that the Dam located to the central portion of Site immediately adjacent to the ANL facility to the north may be hydrologically connected with area/s of the ANL facility. Therefore, the risk of contamination entering the Site is considered possible without further investigation.

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- Predominantly non-saline to slightly saline soils were identified in shallow soils increasing to slightly to very saline soils at depth. Salinity management measures should be included as part of the construction environmental management plan for the Site.
- Anthropogenic material from the demolition of the existing shed and infrastructure should be removed from the Site prior to any vegetation clearance or earthwork activities.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.
- Where any on-site material requires disposal, these should be assessed in accordance with NSW EPA, Waste Classification Guidelines, Part 1: Classifying Waste (2014) and the NSW EPA Waste Recovery Framework prior to disposal or beneficial re-use. The results of this DSI should be included in the final waste classification.

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1 Introduction

This Detailed Site Investigation (DSI) has been prepared by EP Risk Management Pty Ltd (EP Risk) to accompany a State Significant Development Application (SSDA) for the proposed development of at 230 Martin Road, Badgerys Creek, NSW, 2555 (the Site). The Site is legally described as Lot A in Deposited Plan (DP) 406215 and covers a total area of approximately 24.28 hectares (ha).

EP Risk was engaged by EMKC³ Pty Ltd (EMKC³) to undertake a DSI prior to submission of the SSDA and assess whether the land is suitable for the proposed Industrial land use at the Site and to address LCC's requirements in section 5.2, "Environmental Health – Contaminated Land", of the Planning Secretary's Environmental Assessment Requirements (SEARs) for the Site. The location and boundary of the Site is shown in **Figure 1**.

The proposal seeks approval for two (2) contemporary warehouse or distribution centre buildings at 230 Martin Road, Badgerys Creek. The Development will comprise:

- Site clearance works, including the removal of existing structures
- Bulk earthworks and the installation and augmentation of utilities infrastructure and other services
- Construction and operational use of two warehouse or distribution centres containing ancillary manufacturing use in the proposed Lot 1 building with associated parking, landscaping across the site and access
- Other ancillary works including stormwater infrastructure (excluding works to be delivered by public authorities e.g., Park Edge Street and the Regional Stormwater Infrastructure basin) and delivery of the frontage upgrade of along Martin Road to facilitate access to the site.

Under the State Environmental Planning Policy (Western Parkland City) 2021, the area is zoned for employment uses, with the western portion of the Site which is within the proposed development boundary (Assessment Area) currently zoned as Enterprise (ENT) and the larger eastern portion of the Site which sits outside the Assessment Area of the Site is zoned as Environment and Recreation (ENZ). Wianamatta South Creek is located along the eastern boundary of the Site and is classified as an environmentally sensitive area. The boundary of the Assessment Area is shown in **Figure 1 and 2**.

1.1 Background

EP Risk was engaged to undertake a Detailed Site Investigation within the Assessment Area in response to previous environmental investigations undertaken at the Site prior to submission of a development application.

1.2 Site Identification

The Site identification details are presented in **Table 1**.

Table 1 – Site Identification	
Item	Description
Address	230 Martin Road, Badgerys Creek, NSW
Legal description	Lot A in DP 406215
Assessment Area	8.1 ha
Site Area	23.81 ha
Municipality	Liverpool City Council (Council)
Zoning	Enterprise (ENT) and Environment and Recreation (ENZ).

1.3 Proposed Development

EP Risk understands the proposed development will comprise an area of approximately 8.1 ha within the Site and is situated predominantly to the western portion (Assessment Area) zoned as ENT: Enterprise, with tree planting works to be undertaken on the eastern section currently zoned as ENZ: Environment and Recreation. The proposed development involves the construction of two (2) contemporary warehouse or distribution centre buildings at 230 Martin Road, Badgerys Creek. Thus, the proposed development will occur under Industrial land use.

Table 2 – Proposed Development Details	
Item	Description
Total Gross Floor Area (GFA)	36,770 m ²
Uses	Warehouse or Distribution Centre. Ancillary office (lot 1 and lot 2). Ancillary manufacturing (lot 1 only).
Warehouse or Distribution GFA	Lot 1: 16,465 m ² Lot 2: 18,564 m ² Total: 35,029 m ²
Office GFA	Lot 1: 600 m ² Lot 2: 1,104 m ² Total: 1,704 m ²
Amenities block GFA	Lot 1: 37 m ²
Maximum Building Height	Lot 1: 12.95 m Lot 2: 12.65 m
Car Parking	Lot 1: 86 spaces Lot 2: 119 spaces Total: 205 spaces
Landscaped Area	Lot 1: 4,206 m ² Lot 2: 3,412 m ² Total: 7,618 m ²

A potential flood area has been designated at the rear of Lot 2 that runs the entire width of the property boundary.

1.4 Objective

The objective of the proposed works was to supplement the existing assessments outlined in **Section 3.3** and prepare a DSI for the Assessment Area, to assess the contamination status and examine if the Assessment Area is suitable for the proposed development and meet LCC's requirements of section 5.2 in the SEARs for the Site. Additionally, where contamination is identified examine the potential risks to site workers, future users and the environment.

1.5 Scope of Work

The scope of works comprised the following:

- Application for Dial Before You Dig (DBYD) plans.

- Update of a health and safety plan (HASP) and safe work method statement (SWMS).
- Underground service location using an accredited service locator.
- Undertake a Site visit to observe on-site and off-site conditions.
- Detailed review of previous environmental report.
- Identify potentially contaminating activities that have occurred at the Site and develop a preliminary site conceptual model (CSM).
- Advancement of twenty (20) test pits within the Assessment Area to the maximum depth of 2.0 mBGL to assist the geotechnical assessment attached as **Appendix F**.
- Collection of soil samples from the twenty (20) test pits and submission of the sample to a National Association of Testing Authorities (NATA) accredited laboratory for analysis.
- Preparation of this report in accordance with the NSW EPA (2020) *Guideline for Consultants Reporting on Contaminated Land* and the ASC NEPM 2013.

2 Site Condition and Surrounding Environment

2.1 Site inspection

On 23 October 2023, EP Risk field personnel conducted an inspection of the Site and immediate surroundings.

The following features were observed:

- The Site was accessible via Martin Road to the west of the Site.
- An exposed soil surface driveway off Martin Road led to a shed with two (2) shipping containers under the shed. The shed and shipping containers housed old tubs, crates and general rubbish.
- Evidence of stored excavated or imported material banded by large cement blocks was observed at the rear of the shed. An elevated built-up mound of potentially uncontrolled fill covered in grass and weeds was observed behind the storage area and travelled towards the northern boundary.
- The Site sloped downwards from southwest to the east/northeast.
- Anthropogenic material was observed in form of bathtubs, two (2) skip bins with barbed wired, containers and vegetation inside, a 1,000 L container with unknown contents and plastic bag remnants across the Site.
- A large dam was identified outside of the proposed development boundary in the central northern portion of the Site, immediately adjacent and downgradient of the composting facility.
- Photographs of the inspection are provided within **Appendix B**.

2.2 Surrounding Land Use

The site is located within land parties of mixed use, primarily commercial / industrial and rural-residential and agricultural areas. An environmentally sensitive area in Wianamatta South Creek is located to the east. Surrounding land use comprised the following:

To the North

- Australian Native Landscapes - Composting facility.
- Clean Ground – Commercial & Office Cleaning.
- Residential properties.
- Agriculture land / grazing paddocks.

To the South

- Agriculture land / grazing paddocks.
- Residential properties.

To the East

- South Creek.
- Residential properties.
- Kemps Creek Memorial Park.

- Agriculture land / grazing paddocks
- Residential properties.
- PGH Bricks Pty Ltd Badgerys Creek

2.3 Environmental Setting

The information provided in the following sections is a summary of the information presented in previous environmental reports: EP Risk (2023¹), Nearmap Imagery, Lotsearch Data (Lotsearch 2023) and publicly available online records.

Table 3 – Environmental Setting	
Record	Findings
Topography and Hydrology	The Site is relatively flat with a slight slope down to the north-east towards South Creek. The elevation of the Site ranged from 46 to 56 metres above the Australian Height Datum (mAHD).
Geology	According to the Property Boundaries & Topographic Data from Department Finance, Services & Innovation 2023 Geological Map (Lot search 2023), the Site is underlain by Alluvial floodplain deposits (Quaternary) and Bringelly Shale (Middle Triassic). Alluvial floodplain deposits are categorized by Silt, very fine- to medium grained lithic to quartz-rich sand, clay. The dominant lithology consists of clastic sediment. Bringelly Shale is categorized by Shale, carbonaceous claystone, laminite, lithic sandstone, rare coal, the dominant lithology being shale.
Soil Landscapes	Review of the eSPADE database from the NSW Department of Planning, Industry and Environment ² indicates that the soils on site are part of the Blacktown landscape. Soils generally tend to be shallow to moderately deep (>100 cm) hard setting mottled texture contrast soils; Red and Brown Podzolic Soils on crests grading to Yellow Podzolic Soils on lower slopes and in drainage lines.
Hydrogeology	A summary of the EP Risk (2023) report stated nine (9) registered groundwater wells were identified within 1km from Site by the NSW Department of Primary Industries. Groundwater flow direction is unknown but is expected to follow surface gradients towards South Creek (east to north-east). No standing water levels (SWL) were provided in the existing well data. EP Risk sampled one (1) existing well on-site installed by Sydney Water (SC-BH06) which recorded the base of the well at 5.78 mBGL, SWL was approximately 0.70 mBGL. • The water parameters sampled by EP Risk (2023) indicated the following: • Temperature = 16.1° – 17.2° • Electrical conductivity (EC) = to 1031 mS/cm to 2558 mS/cm. • Dissolved oxygen (DO) = 4.10 mg/L to 6.88 mg/L. • Redox Potential (ORP) = 154.0 mV to 215.8 mV. • pH = 6.2 to 7.5. • Total dissolved solids (TDS) = 663.60 mg/L to 738.00 mg/L.

¹ EP Risk (2023), *Environmental Site Assessment, 230 Martin Rd Badgerys Creek NSW*, reference: EP3174.001_v1), dated 16 June 2023.

² NSW Department of Planning, Industry & Environment, eSPADE v2.2

Table 3 – Environmental Setting	
Record	Findings
Acid Sulfate Soils	A search of the Atlas of Australian ASS database completed by Lotsearch (2023 ³) identified the Site to be within a Class C category for acid sulfate soils. The Class C category is considered to have an extremely low probability of ASS occurrence (1-5% chance) of occurrence.
Dryland Salinity	The Site falls within the high hazard salinity potential risk from the Department of Planning, Industry and Environment map of the Salinity Potential in Western Sydney (2002).
Bushfire Prone Area	Bush Fire Prone Land Category was as follows: - Onsite: Vegetation Category 1 (highest risk) and Vegetation Category 3 (low risk). Only Vegetation Category 3 is located within the proposed development boundary. - Off-site (2 m): Vegetation Category 2 (moderate risk)
Waste Management Facilities	There are no waste management facilities within 1 km of the Site.
National Liquid Fuel Facilities	There are no national liquid fuel facilities within 1 km of the Site.
Mining Subsidence	No Mining Subsidence Districts have been identified within 1 km of the Site.
Mining and Exploration Titles	There is one (1) Current Mining & Exploration Titles (ML1771) owned by PGH Bricks and Pavers Pty Limited with a mineral (clay/ shale) resource approximately 19 m southwest of the Site.
Former Gasworks	There are no former gasworks within 1km of the Site.

2.4 Regulatory Searches

A summary of the regulatory searches performed by Lotsearch (2023) are summarised in **Table 4**.

Table 4 – Regulatory Searches	
Search	Results
Contaminated Land	The Site was not currently regulated under the Contaminated Land Management Act (CLM Act) 1997. There were also no neighbouring sites notified to the NSW EPA within 1 km of the Site.
Licensed Activities under the Protection of the Environment Operations Act 1997	There were six (6) records of licensed activities under the Protection of the Environment Operations (POEO) Act 1997 within 1 km of the Site: - Boral Bricks by PGH Bricks & Pavers Pty Ltd at 235 Martin Road, located immediately adjoining southwest of the Site for the activity of: - Ceramics Production; - Land-based extractive activity; and - Mining for minerals. - Australian Native Landscapes (ANL) Pty Ltd at 235 Martin Road, located immediately adjoining north of the Site for the activity of: - Composting; and - Waste storage - other types of waste. - Breeder Farms by Inghams Enterprises Pty Ltd, at Lot 23 Badgerys Creek Road, approximately 944 m southwest of the Site, for the activity of: - Bird accommodation

³ Lotsearch Enviro Pro (Lotsearch 2023), 230 Martin Road, Badgerys Creek, NSW, 2555, reference: LS044558 EP, dated 07 June.

Table 4 – Regulatory Searches

Search	Results
	Based on the nature of the listed activities these are considered not likely to have impacted the Site with the exception of the ANL facility, which is adjacent and immediately upgradient from the Site. A presumed unplanned dam catchment area has formed on the Site adjacent the ANL facility, with area/s of the ANL facility possibly hydrologically connected with the Dam. Therefore, it is considered there is a possible risk of contamination from the operations of the ANL facility without further testing. However, it is noted the Assessment Area is located upgradient of the Dam, potentially minimising inferred impacts from the ANL facility.
Former Licensed Activities under the POEO Act 1997, now revoked or surrendered	There were five (5) records of former licensed activities issued under the POEO Act 1997 for the Site and immediate surroundings; • Luhrmann Environment Management Pty Ltd for waterways throughout NSW specific to other activities / non-scheduled activity – application of herbicides • Robert Orchard, throughout Various Waterways in NSW specific to other activities / non-scheduled activity – application of herbicides • Liverpool City Council Waterways of Liverpool City specific to other activities / non-scheduled activity – application of herbicides • Sydney Weed & Pest Management Pty Ltd relevant to waterways throughout NSW, 2148 specific to other activities / non-scheduled activity – application of herbicides. Dream Properties Pty Ltd 50 Victor Avenue, Kemps Creek, NSW 2171 specific to Hazardous, Industrial or Group A Waste Generation or Storage; Nonthermal treatment of hazardous and other waste; Recovery of waste oil (now revoked). Based on the separation distance (906m south) and expected groundwater flow direction (north/north east), Dream Properties is considered unlikely to have impacted the Site.
Delicensed Activities Still Regulated by the NSW EPA	Novartis Animal Health Australasia Pty Ltd at 245 Western Road Kemps Creek was identified for Hazardous, Industrial or Group A Waste Generation or Storage located immediately south east of the Site. While this facility is located immediately adjacent the boundary of the Site, given it is located downgradient of the Site and Assessment Area and the facility was licensed the inferred potential contamination risk is unlikely.
Heritage	The land is not situated in a heritage conservation area and an item of environmental heritage is not located on the land. There is also no heritage listed items within the immediate vicinity of the Site. No areas of cultural significance were identified on the Site.

3 Site History

3.1 Review of Historical Aerial Photos

Aerial photographs of the property from 1949 to 2023 were reviewed in a previous environmental report (EP Risk 2023), and a summary is provided in within **Table 5**.

Table 5 – Historical Aerial Photograph Review	
Year	Description
1949	Property: The Site appears to have been used for agricultural purposes. The area is mainly grassland within minor trees present. No buildings are present. Surrounds: The neighbouring land appears to be used for agricultural purposes. The surrounding land appears similar to the Site in that there is little tree cover with the majority of the Site covered in a grass surface. The tree cover is denser in the southeast. A residential property is visible to the northwest and a shed is present to the southwest. South creek is located to the southeast to the northeast border of the Site.
1955/1956	Property: No significant change has occurred. Surrounds: Cropping grids are present in the surrounding area.
1961	Property: No significant change has occurred. Surrounds: A small dam is located to the west and north of the Site.
1965	Property: No significant change has occurred. Surrounds: A property to the north had a house constructed and a small dam was constructed next to the property. Further cropping grids present.
1970	Property: No significant change has occurred. Surrounds: Two more houses have been constructed on multiple properties to the north.
1978	Property: The grass seems to be patchier in its surface coverage and bare soil is observed. Surrounds: No significant change has occurred.
1982	Property: No significant change has occurred. Surrounds: There are signs of significant stockpiling of material in the property to the north of the Site. The stockpiling appears consistent with the function of the property as the Australian Native Landscape premises.
1986	Property: No significant change has occurred. Surrounds: Further stockpiling is observed with the property to the north of the Site. A Large building with an associated carpark was built next to the stockpiled material. Residential buildings have been built to the north and west.
1991	Property: No significant change has occurred. Surrounds: The property to the north has undergone development works. Stockpiled material has now spread to half of the property. A small dam is seen to the east of the large building. Residential buildings have been built to the north and west.
1994	Property: No significant change has occurred. Surrounds: Further stockpiling was observed on the eastern end of the northern property.
2005	Property: Two (2) small structures (sheds) are located within the north and southwestern corner of the Site. Evidence off pooled water in the central northern portion of the Site has appeared. Surrounds: There are signs of significant stockpiling of material in the property to the north of the Site. A second small water body is located on the northeastern corner of the adjacent property.
2007	Property: No water was observed in the pooled water identified in the central northern portion previously, however, the evidence of erosion and pooling has increased in size. No other significant change has occurred.

Table 5 – Historical Aerial Photograph Review

Year	Description
	Surrounds: Further stockpiling of material with the adjacent northern property. A large water catchment is observed in the southeast portion of the property.
2011	Property: A small dam is located in the central northern portion of the Site. The dam is bordering the northern property. A building (shed) has been constructed within the northwestern corner of the Site. Possible signs of earthworks were identified in the surrounding area. Surrounds: There are signs of significant stockpiling of material in the property to the north of the Site. Another large building has been constructed on the northern property.
2016	Property: The water catchment on the northern boundary of the Site became significantly larger. The small structure in the northwestern corner of the Site has been removed. Surrounds: Further stockpiling of material and development to the north.
2020	Property: No significant change has occurred. Surrounds: Stockpiling on the property to the north continued.
2023	Property: No significant change has occurred. Surrounds: Stockpiling on the property to the north continued.

3.2 Summary of Site History

The land slopes to the northeast and has an approximate elevation of 48 to 56 mAHD. Groundwater is expected to flow to the east / northeast and discharge into South Creek.

The historical aerial photographic review indicated the following:

- The Site has been predominantly undeveloped and used for agricultural purposes.
- Possible earthworks/ surface stripping occurred within the northwestern corner of the Site from 2007 onwards.
- The neighbouring property to the north started stockpiling soil / landscape material from 1991 onwards. Associated infrastructure including buildings, warehouses, carparks and water bodies have been developed since. The continual stockpiling of material was observed until the present date (7 June 2023).
- Although there was no prior evidence of pooled surface water or excavation works prior to the 2005 aerial image, there was evidence of surface water within a dam located in the central northern portion of the Site between circa 1991 and 2023. This appeared to occur in conjunction with development of the Australian Native Landscape composting facility immediately to the north of the Site. The dam is currently approximately 50 m in length and width. Based on the nature of the activities and proximity of the ANL facility, it is considered possible the Site may be impacted by the ANL facility activities without further testing.
- There was one (1) former delicensed activity (Novartis Animal Health Australasia) identified for Hazardous, Industrial or Group A Waste Generation or Storage located 2m southeast of the Site. While this facility is located immediately adjacent the boundary of the Site, given it is located downgradient of the Site and Assessment Area and the facility was licensed the inferred potential contamination risk is unlikely.
- There were only minor developments to the Site including the building of three (3) sheds.

- A search of the NSW EPA database revealed no records of licensed and formerly licensed activities on the Site under the POEO Act 1997. Both the Site and its neighbouring properties were not listed on the NSW EPA Record for Contaminated Sites notified to the NSW EPA in accordance with the CLM Act.

It should also be noted the Site is in an area of high salinity potential. If saline soils are present on-site, they are considered low risk to human health. However, saline soils present a significant risk to buildings and the surrounding environment. The Site falls within the high potential salinity data coverage for the Department of Infrastructure, Planning and Natural Resources map of the Salinity Potential in Western Sydney (2002). In accordance with WSROC a Level 3 Salinity Management Response is recommended, and the Site should be further assessed for sodic or saline sub-soils and a site-specific management strategy developed.

3.3 Previous Environmental Investigations

At the time of assessment, the following previous environmental investigations had been completed at the Site. A summary of the previous assessments is provided below:

Zoic (2021) Preliminary Site Investigation, 230 Martin Rd, Badgerys Creek (ref: 20062 R3)

Zoic Environmental Pty Ltd (Zoic) was previously engaged by Element Environment Pty Ltd on behalf of Downer EDI Works Pty Ltd to prepare a Phase 1 Preliminary Site Investigation (PSI). The PSI concluded the following:

- The Site was historically used for grazing/ livestock purposes. Small structures were observed within the northwest and southwestern corners of the Site.
- Historical earthworks and stockpiling of material was evident during a site walkover. Anthropogenic material including concrete, brick, tiles, clay piping and plastic was observed.
- No Asbestos containing material (ACM) was observed on the surface of the Site.
- A small former dam, located near the eastern boundary of the Site, adjacent to the South Creek, had similar anthropogenic material.
- The eastern portion of the Site is low-lying and falls within a flood plain. Evidence of overflow from South Creek and another minor drainage line during heavy rain events was observed through the centre of the Site.
- The Site was within an area of salinity potential.

The PSI concluded the potential for widespread contamination to be present at the Site was considered to be low.

The following was recommended:

- An Unexpected Finds Protocol (UFP) should be prepared for the Site.
- A geotechnical investigation to inform a detailed design to address the high salinity potential.

Geosyntec (2022) Limited Detailed Site Investigation, 230 Martin Rd Badgerys Creek NSW (ref: 20279_Revision 4).

Geosyntec Consultants Pty Ltd (Geosyntec) was engaged by Element Environmental on behalf of Downer EDI Works Pty Ltd (Downer) to undertake a limited Detailed Site Investigation (DSI) at the Site. The DSI was restricted to highlighted areas of known fill activities to the north-western corner of the Site and stockpiled soils in the south-eastern portion of the Site. The DSI concluded the following:

- Fill material in the form of a sandy clay/ gravelly sand and clayey sand was detected from 0.3 – 0.8 metres Below Ground Level (mBGL). Anthropogenic material in the form of asphalt rubble, gravels,

bricks and concrete rubble was observed. Underlain natural was observed in the form of orange to grey clay.

- Analytical results for the soil samples analysed were reported below the laboratory limit of detection and / or the adopted human health criteria. Five (5) samples exceeded the ecological criteria, one (1) for zinc and five (5) for benzo(a)pyrene.
- The high levels of benzo(a)pyrene were considered unlikely to present a risk of leaching and mobilisation as the levels were likely from the ash/ fill material in the stockpiles.
- No friable (non-bonded) or bonded (non-friable) asbestos was detected during the investigation.

The DSI recommended the following:

- Areas with impacted contamination should be placed in area that will not have contact with any proposed landscaping and away from environmental receptors such as South Creek.
- A Soil Management Works Plan (SMWP) and an Unexpected Finds Protocol (UFP) should be prepared to manage the proposed earthworks.

EP Risk (2023) Environmental Site Assessment, 230 Martin Rd Badgerys Creek NSW (ref: EP3174.001_v1).

EP Risk Management Pty Ltd (EP Risk) was engaged by EMKC³ to undertake an Environmental Site Assessment (ESA) at the Site for due diligence purposes prior to acquisition of the Site. The ESA concluded the following:

- The soil sampling program was targeted to previously identified Areas of Environmental Concern (AECs).
- Soil samples generally reported metals, Total Recoverable Hydrocarbons (TRH), benzene, toluene, ethylbenzene, and xylene (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), Organochlorine Pesticides (OCP), Organophosphate Pesticides (OPP), Polychlorinated Biphenyls (PCB) and Per- and polyfluoroalkyl substances (PFAS) concentrations below the applicable human health and ecological criteria and/or the (LOR) with the exception of concentrations of PFOS ASLP (leachate) within sample TP05_0.2 (0.26 µg/L), which was above the adopted Heads of EPAs of Australia and New Zealand (2020) PFAS National Environmental Management Plan 2.0 (HEPA NEMP) freshwater 95% species protection criteria.
- All surface water and sediment samples reported concentrations of CoPC below the applicable ecological and health criteria.
- Elevated metals were recorded in groundwater samples which were attributed to background concentrations.
- Elevated levels of various, non-regulated PFAS contaminants in groundwater were reported in one (1) location adjacent the ANL composting facility. It was considered this was likely from an off-site source.
- Due to the elevated levels of PFAS reported in groundwater, EP Risk considered there is a possibility in the future that the landowner may have a duty of care to notify the EPA of the on-site contamination in accordance with the NSW EPA, Guidelines on the Duty to Report Contamination under the Contaminated Land Act 1997 (2015).

Recommendations:

- An unexpected finds protocol should be adopted for the duration of the construction works.
- If future construction plans involve management of the on-site dam further assessment/ possible remediation of the dam may be required.

- Should a change in land use occur from the current commercial / industrial and ecologically sensitive / open space land use identified at the time of the assessment, the findings of this ESA will need to be reviewed and amended.
- In accordance with Western Sydney Salinity Code of Practice (WSROC) a Level 3 Salinity Management Response is recommended, and the Site should be further assessed for sodic or saline sub-soils and a site-specific management strategy developed.

4 Preliminary Conceptual Site Model

The following preliminary conceptual site model (CSM) identifies potential source-pathway-receptor (SPR) linkages in consideration of the Site history, review of previous environmental reports and current land uses. A SPR linkage occurs where there is a contamination source, a pathway and a receptor present.

4.1 Potential Contamination Sources

Potential contaminating activities, contamination sources and CoPC are summarised in **Table 6**.

It should be noted that Acid Sulfate Soils are not listed as a contaminant of concern within the CSM below, primarily due to their extremely low likelihood of occurrence, as determined during the desktop review.

Table 6 – Potential Contamination Sources		
Source	Potential Contaminating Activity	CoPC
On-site	Potential historical fill of unknown origin and quality.	Metals, TRH, BTEX, PAH, PCB, OCP, OPP and asbestos.
	Former agricultural uses of the Site.	OCP and OPP.
	On-site dam	PFAS, Nitrate and Ammonia
Off-site	Historical use of the surrounding area for agricultural / farming purposes.	OCP and OPP.
	Composting facility adjacent to the Site	PFAS (related to possible use of biosolids), Metals, TRH, BTEX, PAH, OCP and OPP, nitrate, ammonia, e-coli and bacteria.

4.2 Potential Affected Media

Current affected media at the Site could potentially include soil, surface water and groundwater.

4.3 Potential Exposure Pathways

The following potential exposure pathways for the CoPC have been identified to exist for potential contamination sources based on a review of Site history:

- Inhalation of fugitive dust during high wind events and/or future construction/remediation and/or users on-site.
- Direct contact and ingestion during use of the Site involving disturbance of the soil, groundwater and/or construction and remediation works on-site.
- Surface water run-off during rainfall events or infiltrating into subsurface soils and groundwater.

4.4 Potential Human and Ecological Receptors

Potential human and ecological receptors at and near the Site are considered to be:

- On-site receptors:
 - Current and future construction and maintenance workers.
 - Current and future users and visitors of the Site.
 - Current and future terrestrial fauna and flora.
 - Current and future aquatic flora and fauna users of the on-site dam.
- Off-site receptors:
 - Current and future construction and maintenance workers at surrounding residential properties, commercial and public open spaces and recreational facilities.
 - Current and future users and visitors of surrounding residential properties, commercial and public open spaces and recreational facilities.
 - Current and future terrestrial flora and fauna in the nearby areas.
 - Current and future aquatic flora and fauna users of the bordering South Creek and other surrounding water bodies.

4.5 Potential and Complete Exposure Pathways

The following potential exposure pathways have been identified for the Site:

- Excavation of on-site soils during maintenance works or future development will create a potential exposure pathway for direct contact and ingestion of soils and inhalation of fugitive dusts by future construction and maintenance workers and visitors should soils be contaminated by CoPC.
- During future development works at the Site or where grass cover is removed, high rainfall events may transport soils and associated contaminants into South Creek and subsequent waterways. Therefore, a potentially complete pathway exists for direct contact and ingestion of potentially contaminated soils and impacted surface water and sediments by terrestrial and aquatic fauna and flora dependant on South Creek.
- Should groundwater be encountered during intrusive maintenance work or redevelopment a potential exposure pathway exists for current and future site users and terrestrial fauna and flora from potentially contaminated groundwater from on-site and off-site potential sources.

4.6 Preliminary CSM Summary

Based on the components of the above CSM and previous investigations, the potential risk to human health and/or the environment is considered moderate, prior to further investigation. The surface water dam located on-site has the potential for PFAS, nitrate and ammonia contamination due to runoff from off-site due to the inferred connection between the composting facilities and the creation of the dam located Onsite. Refer to the preliminary CSM in **Table 7** below.

Location	Primary Source	Affected Media	Pathway	On Site				Off-site		
				Current and future Site Users	Current and Future construction and maintenance workers	Current and Future visitors of the Site	Terrestrial Flora and Fauna at the Site	Construction and maintenance workers, staff and visitors at surrounding	Recreational users of the South Creek	Current and future aquatic flora and fauna within South creek,
On-site	Demolition of the former building /structure on the Site.	Buildings / soil	Direct contact, Ingestion, and Inhalation.	YES	YES	YES	Unlikely	YES	Unlikely	Unlikely
	Historical use of the Site for agricultural / farming purposes	Soil / Groundwater	Direct contact, Ingestion, and Inhalation. Uptake by flora and fauna	YES	YES	YES	YES	YES	Unlikely	Unlikely
	Historically imported fill / stockpiled materials and asbestos waste of unknown origin and quality.	Soil	Direct contact, Ingestion, and Inhalation.	YES	YES	YES	Unlikely	YES	Unlikely	Unlikely
	Surface water/sediment run-off from on-site dam and through south creek during high rainfall events to off-site properties.	Surface water /sediment	Direct contact, Ingestion, and Inhalation. Uptake by flora and fauna	N/A	N/A	N/A	YES	Unlikely	YES	YES
Off-site	Surrounding agricultural properties	Soil / Groundwater	Direct contact, Ingestion, and Inhalation. Uptake by flora and fauna	Unlikely	YES	Unlikely	YES			
	Adjacent ANL Composting Facility (Biosolids)	Surface Water /Groundwater	Direct contact, Ingestion, and Inhalation. Uptake by flora and fauna	Unlikely	YES	Unlikely	YES			

5 Sampling and Analysis

5.1 Data Quality Objectives

To assess whether an appropriate sampling strategy was adopted for the DSI, EP Risk adopted the data quality objectives (DQOs) planning process as:

- Recommended in the ASC NEPM 2013.
- Required within the NSW EPA (2017), *Guidelines for the NSW Site Auditors Scheme (3rd edition)*.

5.2 State the Problem

It is understood that EMKC intends to develop a portion of the Site for industrial purposes. Limited investigations incorporating the entirety of the Site have been conducted which identified CoPC, therefore an additional DSI within the current Assessment Area is proposed to understand the potential extent of CoPC and whether current and/or historical potentially contaminating activities have resulted in contamination that presents a risk to human health and/or the environment under the proposed land use.

5.3 Identify the Decision

To assess the in-situ soil conditions at the Site, the following decisions need to be addressed:

1. Has soil been assessed against relevant HILs and HSLs, and has potential for migration of contamination from soils to groundwater been considered?
2. Has groundwater (where relevant) been assessed against relevant ecological and health-based investigation and screening levels?
3. Are there any issues relating to local area background soil concentrations that exceed relevant investigation levels have been adequately addressed in the Site assessment?
4. Are there any impacts of chemical mixtures in soil?
5. Are there any potential human health and/or ecological risks to the identified Site receptors?
6. Is there any evidence of, or potential for, migration of contaminants off-site? And is there a requirement to notify the Site under the current/future land use scenario?
7. Is there sufficient information to characterise the nature and extent of site contamination?
8. Is a site management strategy including post-remediation environmental plans (Remediation Action Plan (RAP), Asbestos Management Plan (AMP) and/or Long-Term Environmental Management Plan (LTEMP)) required?

5.4 Identify the Inputs to the Decision

The inputs required to make the decision include the following:

- Site history information;
- Environmental data as collected by sampling and analysis of soil and site observations made during the investigation, as well as previously conducted Site assessments;
- Assessment criteria to be achieved on the Site are based on the intended land use and project objectives, as defined by assessment criteria nominated in **Section 7**; and
- Confirmation data generated by sampling and analysis are of an acceptable quality to allow reliable comparison to assessment criteria as undertaken by assessment of quality assurance / quality control (QA/QC).

5.5 Define the Boundaries of the Study

The study boundary is limited to the Assessment Area boundary as described in **Section 1.2** and as shown in **Figure 1** to a maximum depth of 2.4 mBGL. The investigation was undertaken on **23 and 24 October 2023**.

The investigation was conducted to assess the contamination status of soil on Site. Should significant contamination be identified on-site, further assessment may be required in accordance with the identified contamination pathways.

5.6 Develop a Decision Rule

Laboratory analytical data will be assessed against NSW EPA endorsed criteria as identified in **Section 7**. The decision rules adopted to answer the decision identified in **Section 5.3** are summarised in **Table 8** below.

Table 8– Summary of Decision Rules	
Item	Description
1. Has soil been assessed against relevant HILs / HSLs, and has potential for migration of contamination from soils to groundwater been considered?	The nature and extent of soil impacts will be assessed, and soil analytical data will be compared against the adopted health and ecological criteria. The following statistical criteria was adopted with respect to soils: Either: the reported concentrations are all below the adopted Site criteria; Or: the average site concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criteria. And: the 95% upper confidence limit (UCL_{mean}) of the average concentration for each analyte must be below the adopted site criterion. If the statistical criteria stated above are satisfied, and an assessment of risk indicates no unacceptable risks, the decision is Yes, the soil has been assessed and there is no potential for migration of contamination. Otherwise, the decision is Yes there is potential for migration of contamination and further assessments may be required to determine the risk of groundwater contamination at the Site.
2. Has groundwater (where relevant) been assessed against relevant ecological and health-based investigation and screening levels?	Assessment of groundwater was not included within the scope of this DSI, however, a groundwater assessment was included within the previous environmental report (EP Risk 2023) and a Groundwater Impact Assessment was undertaken by EP Risk⁴ (EP Risk 2024).
3. Are there any issues relating to local area background soil concentrations that exceed relevant investigation levels and have they been	If the 95% UCL_{mean} of natural soils, that are considered to not be impacted by potential sources of contamination, exceed adopted health and ecological concentrations, the decision is Yes. Otherwise, the decision is No.

⁴ EP Risk 2024, *Groundwater Impact Assessment*, 230 Martin Road, Badgerys Creek, NSW, 2555. Reference: EP3390.004, issued 14 March 2024 (EP Risk 2024).

Table 8– Summary of Decision Rules

Item	Description
adequately addressed in the site assessment?	
4. Are there any impacts of chemical mixtures in soil?	Is more than one chemical within a group of contaminants considered to have a similar mode of action present which increase the risk of harm? If there is, a hazard quotient (HQ) and Hazard Index (HI) should be calculated from the analytical results for each sample in accordance with ASC NEPM 2013. If the HI is calculated to be greater than 1, the decision is Yes. Otherwise, the decision is No.
5. Are there any potential human health and/or ecological risks to the identified Site receptors?	Soil impacts will be assessed, and data will be compared to the adopted criteria. The decisions will be made based on Decision 1 above. And: If the reported concentrations are all below the adopted site criteria and an assessment of risk indicates no unacceptable risks, the decision is No. Otherwise, the decision is Yes.
6. Is there any evidence of, or potential for, migration of contaminants off-site? Is there a requirement to notify the Site under the current/future land use scenario?	Are chemical contaminants present within natural soil at concentrations exceeding the adopted site criteria? And: is there a potential transport pathway/mechanism If yes, the answer to the decision is Yes. Otherwise, if contaminants are not chemical in nature and are unable to migrate off-site alone, the answer to the decision is No. If the results of the assessment meet the “Notification Triggers” outlined in Section 2.3 of the NSW EPA, Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (2015), the decision with regards to requirement to notify the Site is Yes. Otherwise, the decision is No.
7. Is there sufficient information to accurately characterise the site contamination?	If the total number of samples collected is greater than or equal to the recommended number of sample points in accordance with NSW EPA (2022) <i>Contaminated Land Guidelines, Sampling Design Part 1 – Application</i>; And: the likelihood of on-site soil contamination impacting groundwater, surface water and off-site receptors is considered unlikely. And: no areas which exceeded the adopted criteria require further characterisation. Then the decision is Yes, there is sufficient information to accurately characterise the Site contamination with respect to soil. No comment is made in regards to the contamination status of groundwater or soil vapour. Otherwise, the decision is No.
8. Is a site management strategy including post-remediation environmental plans (Remediation Action Plan (RAP), Asbestos Management Plan (AMP)	Is the answer to any of decisions 1 to 8 Yes? If yes, a site management strategy may be required to be developed. If no, a site management strategy is not required.

Table 8– Summary of Decision Rules

Item	Description
or Environmental Management Plan (EMP)) required?	

5.7 Data Quality Indicators

The acceptable limit of error for sampling techniques and laboratory analysis was defined by the DQIs as follows:

Precision

A measure of the reproducibility of measurements under a given set of conditions. The relative percent difference (RPD) has been adopted to assess the precision of data between duplicate sample pairs according to the following equation.

$$RPD\% = \frac{[C_p - C_d]}{C_p + C_d} \times 200$$

Where:

C_p = Primary sample

C_d = Duplicate Sample

An acceptance criterion of ±50% had been adopted for inorganic field duplicates and triplicates and ±50% for organic field duplicates and triplicates. However, it should be noted that exceedances of these criteria are common for heterogeneous soil or fill or for low analyte concentrations.

Accuracy

A measure of the bias in the analytical results can often be attributed to field contamination, insufficient preservation or sample preparation, or inappropriate analytical techniques. The accuracy of the analytical data is assessed by consideration of laboratory control samples and laboratory spikes.

The DQOs, requirements and indicators for the assessment are presented in **Table 8**.

Representativeness

Expresses the accuracy and precision with which sample data represents an environmental condition. Data representativeness was achieved by the collection of samples at an appropriate pattern and density, as well as consistent and repeatable sampling techniques and procedures.

Completeness

Refers to the percentage of data that can be considered valid data. Sufficient data was required to enable an assessment of the Decision Rules.

Comparability

A qualitative comparison of the confidence with which one data set can be compared to another. This was achieved through consistent sampling, analytical testing and reporting techniques.

Table 9 – DQI and Requirements

DQI	Requirement	Data Quality Assessment (DQA) Criteria
Precision		
Standard operating procedures are appropriate and complied with	The sampling methods comply with industry standards and guidelines	Meet requirement
Intra-laboratory duplicates	1 per 20 samples	RPDs < 50%
Inter-laboratory duplicates	1 per 20 samples	RPDs < 50%
Laboratory duplicates	Minimum of 1 per batch per analyte	RPDs < 50%
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte	Recoveries 50% to 150%
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate)	Recoveries 70% to 130%
Laboratory control samples	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Representativeness		
Sampling methodology - preservation	Appropriate for the sample type and analytes	Meet requirement
Samples extracted and analysed within holding times	Specific to each analyte	Meet requirement
Laboratory method blanks	At least 1 per batch per analyte tested for	Result < laboratory reporting limit
Trip blanks	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Trip spikes	1 per lab batch for volatile analytes	Recoveries 60-100%
Rinsate	1 per lab batch for volatile analytes	Result < laboratory reporting limit
Comparability		
Sampling approach	Consistent for each sample	Meet requirement
Analysis methodology	Consistent methodology for each sample	Meet requirement
Handling conditions and sampler	Consistent for each sample	Meet requirement
Field observations and analytical	Field observations to support analytical results	Meet requirement

Table 9 – DQI and Requirements

DQI	Requirement	Data Quality Assessment (DQA) Criteria
Consistent laboratory reporting limit	Consistent between primary and secondary laboratories	Meet requirement
Completeness		
Sampling staff	Consistent sampling staff was used.	Meet requirement
Laboratory accreditation	NATA Accredited laboratory for methods used	Meet requirement
Accredited methods	NATA-accredited methods were used appropriately for each analyte.	Meet requirement
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013).	Meet requirement
Laboratory reporting limit	Laboratory reporting limits consistent and appropriate	Meet requirement
Consistent weather/field conditions	Consistent	Meet requirement
Chain of custody documentation	Appropriately completed	Meet requirement
Field sampling documentation	Appropriately completed	Meet requirement
Overall data set quality	95% of the data must satisfy the DQIs of both field and laboratory data.	

6 Sampling Design and Methodology

The fieldwork was undertaken 23 & 24 October 2023 by experienced EP Risk Environmental Scientists. The sampling program was designed to identify potential contamination in soil within the Assessment Area at the Site. In general accordance with NSW EPA (2022) *Contaminated Land Guidelines, Sampling Design Part 1 - Application*, the program consisted of the following:

Soil Sampling

The minimum recommended sampling density in Table A of NSW EPA (2022) is 55 soil locations to assess an area of 8 ha. Samples were collected at 50% of the NSW EPA (2022) minimum sampling density (20 soil locations in addition to the nine (9) historical locations).

Based upon the testing of the Site already undertaken, an additional 20 locations (29 soil samples in total) will provide a robust preliminary data set to inform statistical analysis to assess the presence and extent of contamination with 95% confidence. This is based upon the absence of a primary source at the Site, the diffuse nature of the secondary source and currently available soil data suggesting minimal impacts. However, it should be noted that depending upon the results of the assessment, additional sampling and testing may be required to comprehensively delineate contamination, which is outside the scope of work provided.

Soil sampling locations are provided as **Figure 1** attached and the scope is detailed below.

Soil Sampling

The methodology for soil sampling was as follows:

- Soil samples were collected from 20 test pit locations.
- Collection of soil samples from 0.2 m below ground level ('mBGL'), 0.5 mBGL, 1.0 mBGL and every 0.5 m thereafter until a target depth of 2.0 mBGL or 0.3 m into natural soils or refusal (whichever is encountered first).
- Test pits were advanced via a 5-tonne excavator to a maximum depth of 2.0 mBGL or prior rock refusal.
- Soils were logged for type, colour, texture, other characteristics and indications of contamination as presented in the test pit logs attached as **Appendix B**.
- Screening of soil samples using a photoionisation detector ('PID').
- A dedicated pair of nitrile gloves was used for each sample to prevent cross contamination.
- Sufficient soil samples were collected and placed into laboratory prepared sampling jars with a unique sample ID added to the label on each jar.
- The sample jars were preserved on ice immediately after sampling and during shipment to a NATA accredited laboratories for analysis. The laboratory chain of custody documentation was completed and accompanied the samples during shipment.

Salinity

A total of five (5) sampling locations are required to obtain Site coverage in accordance with the Site investigations for urban salinity, **Table 1**, Recommended Levels of Site Description. Salinity samples were collected from seven (7) locations at depths of 0.1 mBGL – 1.5 mBGL for adequate coverage of the Assessment Area.

Proposed soil sampling locations are provided as **Figure 1** attached.

7 Assessment Criteria

Key current environmental legislation, standards and guidance / technical notes related to the management of contaminated land comprise:

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT, Australia. Available at www.waterquality.gov.au/anz-guidelines (ANZG 2018).
 - o ANZG 2018 is the current revision of the Australian and New Zealand Environment and Conservation Council (ANZECC) and Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) guidelines, presented as an online platform.
- Department of Environment and Conservation (DEC) NSW (2007) Guidelines for the Assessment and Management of Groundwater Contamination.
- enHealth (2001) *Exposure Scenarios and Exposure Settings*, enHealth Council Australia.
- enHealth (2012) Australian Exposure Factor Guide. Department of Health and Ageing and enHealth Council Australia.
- enHealth (2012) Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risk from Environmental Hazards. Department of Health and Ageing and enHealth Council Australia.
- Friebe, E & Nadebaum, P (2011) *Health Screening Levels for Petroleum Hydrocarbons in soil and Groundwater. Part 1: Technical development document*, CRC CARE Technical Report no. 10, CRC for Contamination Assessment and Remediation of the Environment, Adelaide, Australia.
- National Health and Medical Research Council and National Resource Management Ministerial Council (NHMRC/NRMMC) (2011), *Australian Drinking Water Guidelines 6* (ADWG), version 3.8, updated September 2022 (Drinking Water Guidelines).
- NHMRC Guidelines for Managing Risk in Recreational Waters, 2008 (GMRRW 2008).
- NSW Acid Sulfate Soils Management Advisory Committee (1998), Acid Sulfate Soils Assessment Guidelines.
- NSW Environment Protection Authority (NSW EPA) (2022) *Contaminated Land Guidelines, Sampling Design Part 1 - Application*.
- NSW EPA (2020) Assessment and Management of Hazardous Ground Gases.
- NSW EPA (2014) *Waste Classification Guidelines: Part 1 – Classifying Waste* (NSW Waste Classification Guidelines 2014).
- NSW EPA (2015) Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997.
- NSW EPA (2017) Guidelines for the NSW Auditor Scheme (3rd Edition) (NSW Auditor Guidelines).
- NSW EPA (2021) Position Statement – WA Guidelines for Asbestos Contaminated Sites.
- NSW OEH (2020) Contaminated Sites Guidelines for Consultants Reporting on Contaminated Sites.
- NSW State Environmental Planning Policy– *Resilience and Hazards* 2021.
- Western Australian (WA) Department of Health (DOH) (2021) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.

It is noted, during the DGI, where no Australian guideline sources are available for the CoPC international guidance from World Health Organisation (WHO), US EPA or other countries was considered. Alternatively, the laboratory limit of reporting was used as an indicator for further evaluation.

Asbestos – Presence/Absence

Asbestos was initially screened to assess the presence or absence of asbestos in soil (AS 4964-2004 Method for the qualitative identification of asbestos in bulk samples) at the laboratory limit of reporting (<0.1 g/kg).

Soil

For the purposes of assessing the results of analytical testing of soils in the development footprint, the following guidelines are to be considered:

- NSW EPA (2017) Guidelines for the NSW Site Auditor Scheme (Third Edition); and
- ASC NEPM 2013.

Soil concentrations will be compared against the following soil investigation levels (SILs):

- **Health-based Criteria for future land use:**
 - ASC NEPM 2013 Health Investigation levels (HILs) for commercial / industrial land use (HIL D).
 - CRC Care (2011) HSLs for Direct Contact on Commercial Industrial land use.
- **Ecological Criteria for future land use:**
 - ASC NEPM (2013) Ecological Screening Levels (ESLs) for Commercial/Industrial land use with fine and coarse soils.
 - Generic Ecological Investigation Levels (EILs) for Commercial/ Industrial land use with fine and coarse soils.
- **Management Limits for future land use:**
 - ASC NEPM 2013 Management Limits for commercial / industrial land use (Management Limits).

Salinity

Salinity is a measure of the total amount of salts present in the soil, it can be quantified by measuring the electrical conductivity of the soil in solution, as presented **Table 10**⁵. It is noted that these values provided in Department of Land and Water Conservation (DLWC) (2002⁶) were derived for agricultural purposes, as no structure-based classification system exists at present. For the purposes of assessing the results of the analytical testing of soil at the site, the criteria for the assessment have been adopted from the following guidelines:

⁵ Sourced from DLWC (2002).

⁶ Department of Land and Water Conservation (DLWC), Site Investigations for Urban Salinity (2002).

Table 10 - Soil Salinity Classification		
Soil Salinity Rating	E _{Ce} ⁷ (dS/m)	Comments
Non-saline	<2	Salinity effects mostly negligible
Slightly saline	2-4	Yields of very sensitive crops may be affected
Moderately saline	4-8	Yields of many crops affected
Very saline	8-16	Only tolerant crops yield satisfactorily
Highly saline	>16	Only a few very tolerant crops yield satisfactorily

⁷ E_{Ce} – electrical conductivity of a saturated soil extract.

8 Quality Assurance and Quality Control (QA/QC)

An assessment of the field and laboratory DQI results is presented in **Table 11**.

Table 11 – DQI Results Summary		
DQI	Requirement	DQA
Precision		
Standard operating procedures are appropriate and complied with	The sampling methods comply with industry standards and guidelines.	Yes
Field duplicates	1 per 20 samples; and - RPDs < 50%.	Yes Yes
Field triplicates	1 per 20 samples; and - RPDs < 50%.	Yes Yes ⁸
Laboratory duplicates	- Minimum of 1 per batch per analyte; - RPDs < 50%; and >10%, laboratory specified.	Yes Yes Yes
Accuracy		
Laboratory matrix spikes	1 per batch per volatile/semi-volatile analyte; and - Recoveries >70% to 130%	Yes Yes
Laboratory surrogate spikes	1 per volatile/semi-volatile analyte sample (as appropriate); and - Recoveries 70% to 130%	Yes Yes
Laboratory control samples	- At least 1 per batch for analyte tested; and 70-130%	Yes Yes
Representativeness		
Sample collection – preservation	Appropriate for the sample type and analytes	Yes
Decontamination procedures	All sampling equipment is to be decontaminated between each sample	Yes
Holding times	Samples extracted and analysed within laboratory-prescribed holding times	Yes
Trip blanks	1 per field laboratory reporting limit	Yes Yes
Trip spikes	1 per field batch for volatile analytes; and - Recoveries 70-130%	Yes Yes
Rinsate	1 per field batch for volatile analytes; and - Result < laboratory reporting limit	Yes Yes
Laboratory Method Blanks	- At least 1 per batch per analyte tested for; and - Result < laboratory reporting limit	Yes Yes
Completeness		

⁸ One soil triplicate analyte (TRP01) exceeded the adopted quality control criteria for Nickel. The soil exceedances are attributed to the heterogenous nature of the sediment sample. It is considered that the exceedance of the quality control criteria has not affected the usability of the data set collected in this investigation.

Table 11 – DQI Results Summary		
DQI	Requirement	DQA
Sample logs	Provided	Yes
Chain of custody	Provided	Yes
Sample receipt acknowledgement	Provided	Yes
Laboratory reports	Provided	Yes
Comparability		
Sampling staff	Consistent sampling staff used	Yes
Laboratory accreditation	NATA-accredited laboratory for methods used	Yes
Accredited methods	NATA-accredited methods used appropriately for each analyte	Yes
ASC NEPM (2013) lab methods	Lab methods consistent with the ASC NEPM (2013)	Yes
Laboratory reporting limits are consistent and appropriate	Meet Requirement	Yes
Consistent weather/field conditions	Consistent	Yes
Overall data set quality	95% of the data must satisfy the DQIs of both field and laboratory data	Yes

Based on the information provided in **Table 11**, EP Risk considers that the DQIs for the project have been met, and the data is appropriate for the purposes of this assessment.

9 Results

9.1 Field Observations

Site Description Conditions

The following observations were made during the initial Site inspection:

- The Site was accessible from the west via Martin Road.
- A shed with two (2) shipping containers housing general rubbish and empty containers were located in the western portion of the Site at the rear of the driveway.
- An area surrounded by cement blocks that was used to store stockpiled material was observed to the east of the shed.
- An elevated built-up mound covered in grass was observed behind the stockpiling area.
- Anthropogenic material was observed across the Site in the form of plastic bags, bathtubs, a 1,000 L liquid storage drum and two (2) skip bins filled with vegetation waste and fencing gear.
- The Site slope downwards from southwest to the east/north east.
- No odours or staining was observed during the investigation.
- No suspected asbestos containing material was observed during the investigation.

Soil Description

Soil descriptions at the Assessment Area were mostly consistent and comprised of a grass surface. A layer of TOPSOIL in the form of a clayey sandy silt/ sandy clayey silt extended to a maximum depth of approximately 0.2 mBGL, underlying natural material in the form of a silty sandy CLAY/ CLAY/ silty CLAY/ sandy CLAY was encountered to a maximum depth of 2.4 mBGL.

Visual and Olfactory Observations

There was generally no visual evidence of excessive contamination. Organic odours suspected to be from the neighbouring composting facility were noted.

Anthropogenic material observed within test pits generally comprised bricks, tiles, plastic and wood.

No asbestos was visually observed within the FILL material or on the surface at the time of the assessment.

Hydrocarbon odours were not observed within soil in the Assessment Area.

No evidence of underground storage tanks (USTs) were observed within the Assessment Area.

Asbestos

No suspected asbestos containing material was observed during the investigation.

9.2 Soil Analytical Testing

The results of soil analytical testing are contained in the analytical summary tables section at the rear of the report and the laboratory Certificates of Analysis (COA) are attached as **Appendix E**.

9.3 Asbestos

Asbestos was not detected within the soil samples submitted for Asbestos ID (AS4964:2004) (0.1 g/kg) and trace analysis.

9.4 TRH / BTEXN / PAH / OCP / OPP & Metals

All BTEXN / PAH / OCP / OPP / Metals TRH concentrations of the soil samples analysed were reported below the adopted human health and ecological criteria and / or laboratory limit of reporting (LOR).

9.5 Salinity

The results of the salinity testing indicated the soil within the Assessment Area is predominantly non-saline at the surface. Salinity was observed to generally increase with depth with predominantly non-saline to moderately saline soils in natural residual clays. Very saline soils were observed in two (2) locations (TP12 & TP15). A summary of the salinity results is presented in **Table 12**.

Based on the results of the salinity testing, the Site is predominantly characterised by non-saline to very saline soils. Furthermore, the results indicate the salinity predominantly increases with depth across the Site.

Table 12 - Summary of Salinity Results					
Sample ID	Soil Description	EC (dS/m)	Multiplication Factor	ECe (dS/m)	Salinity Rating
TP01_0.5	Silty CLAY	0.095	9	0.855	Non-saline
TP02_1.0	Silty CLAY	0.596	9	5.364	Moderately saline
TP05_0.1	Silty sand	0.048	17	0.816	Non-saline
TP08_1.0	Sandy CLAY	0.359	8.5	3.0515	Slightly saline
TP10_0.5	Sandy CLAY	0.101	8.5	0.8585	Non-saline
TP14_1.5	Silty gravelly clay	0.204	9	1.836	Non-saline
TP19_0.5	Sandy CLAY	0.374	8.5	3.179	Slightly saline
Geotech Results					
TP12_2.0	Gravelly silty CLAY	0.96	9	8.64	Very saline
TP15_0.8	Sandy CLAY	1.11	8.5	9.35	Very saline
TP17_0.5	Sandy CLAY	0.15	8.5	1.275	Non-saline
TP20_1.0	Sandy CLAY	0.91	8.5	7.735	Moderately saline

9.6 Aesthetics

Minimal anthropogenic materials were present in the soil profile and no significant fill was identified across the Site. Anthropogenic material was observed across the surface of Site in the form of plastic bags, former planter boxes, bathtubs, a 1,000 L liquid storage drum and two (2) skip bins filled with vegetation waste and fencing gear.

10 Summary of Findings

Data collected from the current investigation and the previous historical investigations are summarised below for the Site. The tables presented below present the summary of results reported where exceedances to the adopted criteria were reported in the samples analysed from historical assessments and the current DSI across the entire Site.

Table 13 – Summary of Soil Analytical Results - Exceedances					
Analyte	No.	Min	Max	Criteria	
Zinc	41	18 mg/kg	1,700 mg/kg	300 mg/kg*	NEPM 2013 EILs Comm/Ind D
Benzo (a) pyrene	41	<0.05 mg/kg	11 mg/kg	0.7 mg/kg	NEPM 2013 ESLs Comm/Ind D
PFOS (leachate)	5	<0.01 µg/L	0.26 µg/L	0.13 µg/L 0.00023 µg/L	NEMP 2000 Freshwater 95% NEMP 2000 Freshwater 99%

*EIL Criteria determined using Ambient Background Concentration (ABC) + Added Contaminant Limit (ACL)

Groundwater flow is expected to follow the gradients towards south creek and flow east to northeast. Groundwater parameters generally indicated the pH was neutral and the groundwater is freshwater.

Table 14 – Summary of Groundwater Analytical Results - Exceedances					
Analyte	No.	Min	Max	Criteria	
Copper	3	0.001 mg/L	0.005 mg/L	0.0014 mg/L 0.001 mg/L	ANZG (2018) Freshwater 95% ANZG (2018) Freshwater 99%
Nickel	3	0.008 mg/L	0.022 mg/L	0.011 mg/L 0.008 mg/L	ANZG (2018) Freshwater 95% ANZG (2018) Freshwater 99%
Zinc	3	<0.005 mg/L	0.009 mg/L	0.008 mg/L 0.0024 mg/L	ANZG (2018) Freshwater 95% ANZG (2018) Freshwater 99%
Sum of PFHxS and PFOS	3	<0.002 µg/L	0.422 µg/L	0.07 µg/L	ADWG 2022 Health
PFOS	3	<0.002 µg/L	0.176 µg/L	0.13 µg/L 0.00023 µg/L	NEMP 2000 Freshwater 95% NEMP 2000 Freshwater 99%

The findings of the current assessment of soil for the Assessment Area can be summarised as follows:

- CoPC in soil samples analysed were below the adopted health and ecological screening levels within all soil samples analysed.
- Salinity was predominantly non-saline from the surface to approximately 0.5 mBGL, increasing with depth to moderately saline. Very saline soils were observed at two (2) locations at depths of 0.8 mBGL and 2.0 mBGL.
- Visible suspected bonded (non-friable) ACM was not identified on the ground surface or within the test pits during sampling.

11 Discussion

Based on the decision-making process for assessing urban redevelopment sites detailed in the NSW EPA 2017, modified to meet the specific project objectives, a number of decisions, as presented in **Section 5.3**, are to be considered, each of which is discussed below.

Has soil been assessed against relevant HILs / HSLs, and has potential for migration of contamination from soils to groundwater been considered?

Based on the findings of the historical investigations and this assessment within the Development Footprint, soil sample results analysed from across the Assessment Area have been compared to the commercial/ industrial health-based and ecological criteria. TRH / BTEXN / PAH / OCP / OPP and Metals within the in-situ soil samples were reported less than the adopted human health and ecological criteria.

However, as noted in **Section 10** above some exceedances to primarily the adopted ecological criteria were reported within the remaining portions of the Site.

EP Risk (2023) reported concentrations of PFAS within the soil (mg/kg) samples analysed below the adopted commercial / industrial and public open space criteria, however PFOS ASLP concentrations within one (1) sample (TP05) exceeded the 95% NEMP criteria. The sample location (TP05), is not located in the Assessment Area, was downgradient from the neighbouring southeastern water body (Australian Native Landscape property). Considering the topography of the area, in high rainfall events, water within the off-site dam could potentially overflow on-site, specifically to the area surrounding TP05. Thus, TP05 was placed directly between the potential overflow channel. No surface water sample was collected from the offsite dam and no water from potential overflow was observed whilst sampling. (EP Risk 2023).

Has groundwater (where relevant) been assessed against relevant ecological and health-based investigation and screening levels?

Groundwater samples reported exceedances in Copper, Nickel and Zinc above the adopted ANZG 2018 Fresh Water Slightly to Moderately Disturbed Ecosystems, the NEPM 2013 Table 1C GILs, Fresh Waters and the ADWG 2022 Health Guidelines. (EP Risk 2023). Exceedances of nickel, copper and zinc were detected within groundwater, marginally above the criteria. As all results were within 1 order of magnitude from the selected criteria, these results are likely indicative of regional background concentrations and not of any specific source of contamination. (EP Risk 2023).

Concentrations of PFOS within one groundwater sample (GW03) were reported within one (1) sample above the PFAS NEMP 2020 Interim Fresh water 99% and 95% criteria, and Sum of PFHxS and PFOS were reported within one (1) sample above the ADWG 2022 Health Guidelines. (EP Risk 2023).

Exceedances of the Sum of PFHxS and PFOS within groundwater above the Australian Drinking Water Guidelines was considered to pose low risk as groundwater within the vicinity of the Site does not appear to be used for drinking water as no registered drinking water wells were identified within 500 m of the Site (EP Risk 2023). Groundwater concentrations were reported below the recreational criteria therefore there is no direct contact risk for construction and maintenance workers on the Site or the Assessment Area.

Groundwater sample GW03 also exceeded the PFOS NEPM 95% and 99% freshwater criteria which was positioned hydraulically downgradient to the other groundwater sampling locations. Whilst GW03 was located downgradient of the on-site dam, the on-site dam was considered not a likely contamination source, as low levels of PFAS were recorded within the sediment and surface water samples collected. Considering the proximity of GW03 to the neighbouring composting facility (Australian Native Landscapes), including surface water connection, this was flagged as a potential off-site source (EP Risk 2023).

The depth to groundwater is approximately 0.70 m below ground surface. South Creek is adjacent the eastern boundary. Therefore, the concentration of PFOS above the ecological criteria may pose a risk to the Creek. Due to the potential off-site source being downgradient of the assessment area, it is considered unlikely to impact the proposed development without further assessment.

Are there any issues relating to local area background soil concentrations that exceed relevant investigation levels and have they been adequately addressed in the Site assessment?

All in-situ natural soil samples analysed for TRH / BTEXN / PAH / OCP / OPP / Metals were reported less than the adopted site criteria within the Assessment Area.

PFOS was detected within Site groundwater and is inferred to potentially be sourced from the adjacent offsite land uses and should not impact the assessment area. However, further information would be required to confirm this inference.

Are there any impacts of chemical mixtures in soil?

There is no evidence of hazardous chemical mixtures present within the proposed development area.

Are there any potential human health and/or ecological risks to the identified Site receptors?

Based on the analytical findings of the investigation, there is no evidence to suggest that a risk is present to human receptors.

There may be a low to medium risk posed to ecological receptors due to elevated levels of zinc, B(a)P identified in soil samples and the concentrations of PFOS identified within groundwater samples. However, these risks are present within the remaining portion of the Site and not the Assessment Area.

Is there any evidence of, or potential for, migration of contaminants off-site? Is there a requirement to notify the Site under the current/future land use scenario?

Based on the results from the historical assessments and the DSI, it is unlikely contaminants are migrating from the Assessment Area.

The greater Site has had PFOS identified above drinking water and ecological criteria and further investigation may be required to determine the most likely source/s.

Is there sufficient information to characterise the nature and extent of site contamination?

Sampling locations were adopted in accordance with the NSW EPA *Guidelines for Contaminated Land, Sampling Design Part 1 – Application* (2022) to provide a systematic and targeted sampling plan, appropriate to the given size of the Site. The nature and extent of Site contamination was considered to be sufficiently characterised based on the available data, noting that groundwater was not assessed within the scope of this assessment.

Is a site management strategy including post-remediation environmental plans (RAP, AMP or EMP) required?

No suspected asbestos was observed during the investigations, however there is potential for uncontrolled fill at the Site. If any excavation is to occur, an unexpected finds protocol should be adopted should any asbestos be observed during works. This could be included within the CEMP for the Site.

Predominantly non-saline to slightly saline soils were identified in shallow soils increasing from slightly to very saline soils at depth. Salinity management should be included as part of the construction environmental management plan for the Site.

12 Refined Conceptual Site Model

A refined conceptual site model (CSM) has been developed based upon the information provided in previous sections of this report.

12.1 Contamination Sources

Contaminating activities based on the Site inspection and review of historical records, the following activities have occurred on-site and off-site which may have resulted in the potential for contamination. These activities are summarised as follows:

- Potential historical fill from earthworks, unknown origin and quality.
- Former agricultural uses of the Site.
- The Site boundary is listed within a high hazard salinity potential risk.
- Historical use of the surrounding area for agricultural / farming purposes.
- Australian Native Landscapes Composting facility located adjacent the north of the Site.

12.2 Affected Media

The potential affected media at the Site is soil within the development area and groundwater.

12.3 Potential Exposure Pathways

The following potential exposure pathways for the CoPC have been identified to exist for potential contamination sources based on a review of Site history:

- Inhalation of fugitive dust during high wind events and/or future construction/remediation and/or users on-site.
- Direct contact and ingestion during use of the Site involving disturbance of the soil, groundwater and/or construction and remediation works on-site.
- Surface water run-off during rainfall events or infiltrating into subsurface soils and groundwater.
- Groundwater discharging into South Creek.

12.4 Potential Human and Ecological Receptors

Potential human and ecological receptors at and near the Site are considered to be:

- On-site receptors:
 - o Current and future intrusive construction / maintenance workers.
 - o Current and future users and visitors of the Site.
 - o Current and future terrestrial fauna and flora.
 - o Current and future aquatic fauna and flora users of south creek and the on-site dam.
- Off-site receptors:
 - o Current and future construction and maintenance workers at surrounding residential properties, commercial and public open spaces and recreational facilities.
 - o Current and future users and visitors of surrounding residential properties, commercial and public open spaces and recreational facilities.
 - o Current and future terrestrial flora and fauna in the nearby areas.
 - o Current and future aquatic flora and fauna users of the bordering South Creek and other surrounding water bodies.

12.5 Potential and Complete Exposure Pathways

An analysis of the potential exposure pathways between the COPC and the identified human and ecological receptors are presented in Table 14– Potential Exposure Pathways **Table 14.**

Table 15– Potential Exposure Pathways																				
Location	Primary Sources	Secondary Sources / Affected Media	Release Mechanism	Pathway	On-Site								Off-Site							
					Current and future intrusive construction/maintenance workers	Current and future users and visitors of the Site		Current and future terrestrial fauna and flora		Current and future aquatic fauna and flora users of south creek and the on-site dam.		Current and future construction and maintenance workers at surrounding residential properties, commercial and public open spaces and recreational facilities	Current and future users and visitors of surrounding residential properties, commercial and public open spaces and recreational facilities		Current and future terrestrial fauna and flora in the nearby areas		Current and future aquatic flora and fauna users of the bordering south creek and other surrounding water bodies			
On-site	Potentially imported fill materials of unknown origin and quality including asbestos material	Soil	Direct Contact	Ingestion/Dermal Contact	Rare		Rare		N/A		N/A		Rare		Unlikely		Rare		N/A	
	Demolition of former building / structure on Site			Inhalation	Rare		Rare		N/A		N/A		N/A		N/A		N/A		N/A	
	Former agricultural uses of the Site	Soil / Groundwater		Ingestion / Dermal Contact	Rare	Rare	Rare	Rare	N/A	Unlikely	N/A	Unlikely	Rare	Rare	Rare	Unlikely	Rare	Rare	N/A	Unlikely
	The Site boundary listed within a high salinity potential risk	Soil		Uptake by flora and fauna	N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A	
	Surface water/sediment run-off from on-site dam and through south creek during high rainfall events to off-site properties.	Surface water / sediment		Ingestion / Dermal Contact	N/A		N/A		N/A		N/A	Unlikely	Rare		Rare		Rare		N/A	
				Uptake by flora and fauna	N/A		N/A		Rare		Rare	Unlikely	N/A		Rare		N/A		Rare	
Off-site	Adjacent ANL Composting Facility (Biosolids)	Off-site Groundwater / surface water	Migration of contaminated groundwater	Ingestion	Rare		Rare		N/A		N/A									
				Uptake by flora and fauna	N/A		N/A		Possible		Possible									
				Dermal Contact	Rare		Rare		N/A		N/A									
	Historical use of the surrounding area for agricultural / farming purposes			Dermal Contact	Rare		Rare		Rare		N/A									
				Ingestion	Rare		Rare		Rare		Rare									
				Uptake by flora and fauna	N/A		N/A		N/A		Possible									

Potential Exposure Pathway Key:

Soil

Groundwater

13 Conclusion and Recommendations

EP Risk was engaged by EMKC3 to undertake a DSI for a state significant development application involving a multi-level warehouse development at a Site located at 230 Martin Road, Badgerys Creek NSW. The proposed development was assessed under a NEPM commercial / industrial land use scenario.

The DSI was required to assess whether any contaminating activities are likely to have occurred within the development boundary at the Site which may present a human health or ecological risk under the proposed land use.

The following potentially contaminating activities were identified:

- On-site: Potential importation of fill materials of unknown origin and quality, former agricultural uses of the Site, the Site boundary listed within a high hazard salinity potential.
- Off-site: Adjacent ANL Composting facility located 0m north of the Site, historical use of the surrounding area for agricultural / farming purposes.

During the Site walkover and during an intrusive investigation minor anthropogenic waste was observed. Two (2) shipping containers and a shed were present onsite. Evidence of stored excavated or imported material was observed in an area banded by large cement blocks at the rear of the shed. An elevated mound of potentially uncontrolled fill covered in grass and weeds was observed behind the storage area and travelled towards the northern boundary.

Based on the review of the historical information, the Site was formerly used for agricultural purposes. Since the adjacent ANL site began operations between 1991 and 2005 a small dam in the central northern portion of the Site developed and gradually increased to its current size of approximately 50 m in length and width.

The surrounding land use comprised rural and agricultural land use.

Overall, based on the assessment and refined CSM (conceptual site model) the Assessment Area is considered suitable for the proposed development. This investigation did not identify human health or ecological risks to current or future receptors within the Assessment Area. It is noted the Dam located within the Site is likely hydrologically connected to the adjacent ANL facility and the risk of contamination entering the wider Site (but not the Assessment Area) is considered possible without further investigation.

While contamination at a level warranting management or remediation was not identified, the following is recommended to meet industry best practice during development activities:

- Predominantly non-saline to slightly saline soils were identified in shallow soils increasing to slightly to very saline soils at depth. The Salinity Management Plan⁹ (EP Risk 2024a) should be consulted as part of the construction environmental management plan for the Site.
- Anthropogenic material from the demolition of the existing shed and infrastructure should be removed from the Site prior to any vegetation clearance or earthworks activities.
- An unexpected finds protocol should be implemented during redevelopment to address any unidentified contamination that may be encountered during the proposed redevelopment works.
- Where any on-site material requires disposal, these should be assessed in accordance with NSW EPA, Waste Classification Guidelines, Part 1: Classifying Waste (2014) and the NSW EPA Waste Recovery Framework prior to disposal or beneficial re-use. It is noted that the results of this DSI assessment should be included in the final waste classification.

⁹ EP Risk 2024, *Salinity Management Plan*, 230 Martin Road, Badgerys Creek, NSW, 2555. Reference: EP3390.002_v2, issued 13 September 2024 (EP Risk 2024a).

Figures



Legend

- Site Boundary
- Approximate Development Boundary
- Approximate Sample Locations
- Sample Locations



Figure 2 - Historical Sampling locations

Analytical Tables

	Asbestos	TRH							BTEX								Metals							
	Asbestos AS4964 2004	C10-C16 (F2 minus Naphthalene)	C6-Cl0	C6-Cl0 (F1 minus BTEX)	C10-C16	C10-C40 (Sum of total)	C34-C40	C16-C34	Naphthalene (BTEX)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Arsenic	Cadmium	Chromium (VI)	Copper	Lead	Mercury	Nickel	Zinc
	g/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	50	10	10	50	50	100	100	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	5	1	2	5	5	0.1	2	5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																	3,000	900	3,600	240,000	1,500	730	6,000	400,000
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay				310 480						4 6 9 20														
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind									370								160							
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil		170		215	170		3,300	1,700		75	135	165			180									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil			700		1,000		10,000	3,500																

Field ID	Date																								
TP01_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	6	<1	25	8	16	<0.1	2	7
TP02_0.1	23 Oct 2023	NAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP02_0.5	23 Oct 2023	—	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	9	<1	23	18	15	<0.1	4	11
TP03_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	11	<1	21	18	22	<0.1	3	9
TP04_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	9	<1	17	14	16	<0.1	2	13
TP05_0.1	23 Oct 2023	NAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP05_0.5	23 Oct 2023	—	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	6	<1	25	11	16	<0.1	3	10
TP06_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	7	<1	19	16	16	<0.1	5	17
TP07_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	8	<1	26	17	16	<0.1	4	14
TP08_0.1	23 Oct 2023	NAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP08_0.5	23 Oct 2023	—	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	10	<1	16	16	15	<0.1	<2	6
TP09_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	13	<1	47	16	36	<0.1	6	24
TP10_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	7	<1	18	19	18	<0.1	11	35
TP11_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	8	<1	17	19	11	<0.1	2	12
TP12_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	6	<1	17	26	14	<0.1	4	25
TP13_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	6	<1	14	20	49	<0.1	6	80
TP14_0.1	23 Oct 2023	NAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP14_0.5	23 Oct 2023	—	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	9	<1	20	22	28	<0.1	12	60
TP15_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	300	110	190	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	12	<1	40	24	27	<0.1	6	74
TP16_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	7	<1	20	25	20	<0.1	5	32
TP17_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	11	<1	29	16	23	<0.1	5	86
TP18_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	10	<1	24	15	22	<0.1	4	25
TP19_0.1	23 Oct 2023	NAD	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	11	<1	28	18	28	<0.1	8	30
TP20_0.1	23 Oct 2023	NAD	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP20_0.5	23 Oct 2023	—	<50	<10	<10	<50	<50	<100	<100	<1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	6	<1	16	23	13	<0.1	3	15

NAD = No Asbestos Detected

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)

	PAH																				Halogenated Benzenes
	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(b,f)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOH)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)	Hexachlorobenzene
EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.05
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																	40	40	40	4,000	80
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																					
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind														370							
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil					1.4																
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																					

Field ID	Date																					
TP01_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP02_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP02_0.5	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP03_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP04_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP05_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP05_0.5	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP06_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP07_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP08_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP08_0.5	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP09_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP10_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP11_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP12_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP13_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP14_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP14_0.5	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP15_0.1	23 Oct 2023	<0.5	<0.5	<0.5	0.9	0.7	1.0	0.6	<0.5	0.8	<0.5	2.3	<0.5	<0.5	<0.5	1.3	1.8	1.2	1.5	0.9	9.4	<0.05
TP16_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP17_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP18_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP19_0.1	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05
TP20_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP20_0.5	23 Oct 2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.05

NAD = No Asbestos Detected

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)

	Organochlorine Pesticides																							
	4,4-DDE	α-BHC	Aldrin	Aldrin + Dieldrin	γ-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	δ-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
EQL	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	0.05	0.05	0.05	45	0.05	530	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay												3,600		2,000				100				50		2,500
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind											640													
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																								
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																								

Field ID	Date																								
TP01_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP02_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP02_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP03_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP04_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP05_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP05_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP06_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP07_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP08_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP08_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP09_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP10_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP11_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP12_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP13_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP14_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP14_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP15_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP16_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP17_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP18_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP19_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	
TP20_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
TP20_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	

NAD = No Asbestos Detected

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)

	Organophosphorous Pesticides															PCBs	Pesticides				TPH				
	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos	PCBs (Sum of total)	Demeton-S-methyl	Fenamiphos	Parathion	Pirimphos-ethyl	C6-C9	C10-C14	C15-C28	C29-C36	C10-C36 (Sum of total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.1	0.05	0.05	0.2	0.05	10	50	100	100	50
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil					2,000											7									
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay																									
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																									
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																									

Field ID	Date																								
TP01_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP02_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP02_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP03_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP04_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP05_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP05_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP06_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP07_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP08_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP08_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP09_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP10_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP11_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP12_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP13_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP14_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP14_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP15_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	150	150
TP16_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP17_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP18_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP19_0.1	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50
TP20_0.1	23 Oct 2023	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TP20_0.5	23 Oct 2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.05	<0.1	<0.05	<0.05	<0.2	<0.05	<10	<50	<100	<100	<50

NAD = No Asbestos Detected

Environmental Standards
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Clay
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)

Lab Report Number Field ID Matrix Type Date				ES2336664	ES2336664		ES2336664	1038508	
				TP02_0.5	DUP01		TP02_0.5	TRP01	
				Soil	Soil		Soil	Soil	
				23 Oct 2023	23 Oct 2023		RPD	23 Oct 2023	
	Unit	EQL	RPD						
NA									
Moisture Content	%	1		12.4	14.5	16	12.4		
TRH									
C10-C16 (F2 minus Naphthalene)	mg/kg	50		<50	<50	0	<50	<50	0
C6-C10	mg/kg	10		<10	<10	0	<10	<20	0
C6-C10 (F1 minus BTEX)	mg/kg	10		<10	<10	0	<10	<20	0
C10-C16	mg/kg	50		<50	<50	0	<50	<50	0
C10-C40 (Sum of total)	mg/kg	50		<50	<50	0	<50	<100	0
C34-C40	mg/kg	100		<100	<100	0	<100	<100	0
C16-C34	mg/kg	100		<100	<100	0	<100	<100	0
BTEX									
Naphthalene (BTEX)	mg/kg	0.5		<1	<1	0	<1	<0.5	0
Benzene	mg/kg	0.1		<0.2	<0.2	0	<0.2	<0.1	0
Toluene	mg/kg	0.1		<0.5	<0.5	0	<0.5	<0.1	0
Ethylbenzene	mg/kg	0.1		<0.5	<0.5	0	<0.5	<0.1	0
Xylene (m & p)	mg/kg	0.2		<0.5	<0.5	0	<0.5	<0.2	0
Xylene (o)	mg/kg	0.1		<0.5	<0.5	0	<0.5	<0.1	0
Xylene Total	mg/kg	0.3		<0.5	<0.5	0	<0.5	<0.3	0
Total BTEX	mg/kg	0.2		<0.2	<0.2	0	<0.2		
Metals									
Arsenic	mg/kg	2		9	6	40	9	7.8	14
Cadmium	mg/kg	0.4		<1	<1	0	<1	<0.4	0
Chromium (VI)	mg/kg	2		23	20	14	23	24	4
Copper	mg/kg	5		18	17	6	18	17	6
Lead	mg/kg	5		15	14	7	15	17	12
Mercury	mg/kg	0.1		<0.1	<0.1	0	<0.1	<0.1	0
Nickel	mg/kg	2		4	5	22	4	7.0	55
Zinc	mg/kg	5		11	14	24	11	18	48
PAH									
Acenaphthene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Acenaphthylene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Anthracene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Benzo(a) pyrene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Benzo(b+j)fluoranthene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Benzo(k)fluoranthene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Chrysene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Fluoranthene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Fluorene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Naphthalene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Phenanthrene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Pyrene	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5		0.6	0.6	0	0.6	0.6	0
Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5		1.2	1.2	0	1.2	1.2	0
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
PAHs (Sum of total)	mg/kg	0.5		<0.5	<0.5	0	<0.5	<0.5	0
Halogenated Benzenes									
Hexachlorobenzene	mg/kg	0.05		<0.05			<0.05	<0.05	0
Organochlorine Pesticides									
Organochlorine pesticides EPAVic	mg/kg	0.1						<0.1	
Other organochlorine pesticides									
EPAVic	mg/kg	0.1						<0.1	
4,4-DDE	mg/kg	0.05		<0.05			<0.05	<0.05	0
a-BHC	mg/kg	0.05		<0.05			<0.05	<0.05	0
Aldrin	mg/kg	0.05		<0.05			<0.05	<0.05	0
Aldrin + Dieldrin	mg/kg	0.05		<0.05			<0.05	<0.05	0
b-BHC	mg/kg	0.05		<0.05			<0.05	<0.05	0
Chlordane	mg/kg	0.05		<0.05			<0.05	<0.1	0
Chlordane (cis)	mg/kg	0.05		<0.05			<0.05		
Chlordane (trans)	mg/kg	0.05		<0.05			<0.05		
d-BHC	mg/kg	0.05		<0.05			<0.05	<0.05	0
DDD	mg/kg	0.05		<0.05			<0.05	<0.05	0
DDT	mg/kg	0.05		<0.2			<0.2	<0.05	0
DDT+DDE+DDD	mg/kg	0.05		<0.05			<0.05	<0.05	0
Dieldrin	mg/kg	0.05		<0.05			<0.05	<0.05	0
Endosulfan	mg/kg	0.05		<0.05			<0.05		
Endosulfan I	mg/kg	0.05		<0.05			<0.05	<0.05	0
Endosulfan II	mg/kg	0.05		<0.05			<0.05	<0.05	0
Endosulfan sulphate	mg/kg	0.05		<0.05			<0.05	<0.05	0
Endrin	mg/kg	0.05		<0.05			<0.05	<0.05	0
Endrin aldehyde	mg/kg	0.05		<0.05			<0.05	<0.05	0
Endrin ketone	mg/kg	0.05		<0.05			<0.05	<0.05	0
g-BHC (Lindane)	mg/kg	0.05		<0.05			<0.05	<0.05	0
Heptachlor	mg/kg	0.05		<0.05			<0.05	<0.05	0
Heptachlor epoxide	mg/kg	0.05		<0.05			<0.05	<0.05	0
Methoxychlor	mg/kg	0.05		<0.2			<0.2	<0.05	0
Toxaphene	mg/kg	0.5						<0.5	
Organophosphorous Pesticides									
Tokuthion	mg/kg	0.2						<0.2	
Azinophos methyl	mg/kg	0.05		<0.05			<0.05	<0.2	0
Bolstar (Sulprofos)	mg/kg	0.2						<0.2	
Bromophos-ethyl	mg/kg	0.05		<0.05			<0.05		
Carbophenothion	mg/kg	0.05		<0.05			<0.05		
Chlorfenvinphos	mg/kg	0.05		<0.05			<0.05	<0.2	0
Chlorpyrifos	mg/kg	0.05		<0.05			<0.05	<0.2	0
Chlorpyrifos-methyl	mg/kg	0.05		<0.05			<0.05	<0.2	0
Coumaphos	mg/kg	2						<2	
Demeton-O	mg/kg	0.2						<0.2	
Demeton-S	mg/kg	0.2						<0.2	
Diazinon	mg/kg	0.05		<0.05			<0.05	<0.2	0
Dichlorvos	mg/kg	0.05		<0.05			<0.05	<0.2	0
Dimethoate	mg/kg	0.05		<0.05			<0.05	<0.2	0
Disulfoton	mg/kg	0.2						<0.2	
Ethion	mg/kg	0.05		<0.05			<0.05	<0.2	0
Ethoprop	mg/kg	0.2						<0.2	
Fenitrothion	mg/kg	0.2						<0.2	

Lab Report Number Field ID Matrix Type Date				ES2336664	ES2336664	RPD	ES2336664	1038508	RPD
				TP02_0.5	DUP01		TP02_0.5	TRP01	
				Soil	Soil		Soil	Soil	
				23 Oct 2023	23 Oct 2023		23 Oct 2023	23 Oct 2023	
	Unit	EQL	RPD						
Fensulfothion	mg/kg	0.2						<0.2	
Fenthion	mg/kg	0.05		<0.05			<0.05	<0.2	0
EPN	mg/kg	0.2						<0.2	
Malathion	mg/kg	0.05		<0.05			<0.05	<0.2	0
Merphos	mg/kg	0.2						<0.2	
Methyl parathion	mg/kg	0.2		<0.2			<0.2	<0.2	0
Mevinphos (Phosdrin)	mg/kg	0.2						<0.2	
Monocrotophos	mg/kg	0.2		<0.2			<0.2	<2	0
Naled (Dibrom)	mg/kg	0.2						<0.2	
Omethoate	mg/kg	2						<2	
Phorate	mg/kg	0.2						<0.2	
Prothiofos	mg/kg	0.05		<0.05			<0.05		
Pyrazophos	mg/kg	0.2						<0.2	
Ronnel	mg/kg	0.2						<0.2	
Terbufos	mg/kg	0.2						<0.2	
Trichloronate	mg/kg	0.2						<0.2	
Tetrachlorvinphos	mg/kg	0.2						<0.2	
PCBs									
Arochlor 1016	mg/kg	0.1						<0.1	
Arochlor 1221	mg/kg	0.1						<0.1	
Arochlor 1232	mg/kg	0.1						<0.1	
Arochlor 1242	mg/kg	0.1						<0.1	
Arochlor 1248	mg/kg	0.1						<0.1	
Arochlor 1254	mg/kg	0.1						<0.1	
Arochlor 1260	mg/kg	0.1						<0.1	
PCBs (Sum of total)	mg/kg	0.1		<0.1			<0.1	<0.1	0
Pesticides									
Demeton-S-methyl	mg/kg	0.05		<0.05			<0.05		
Fenamiphos	mg/kg	0.05		<0.05			<0.05		
Parathion	mg/kg	0.2		<0.2			<0.2	<0.2	0
Pirimiphos-methyl	mg/kg	0.2						<0.2	
Pirimphos-ethyl	mg/kg	0.05		<0.05			<0.05		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 50 (1 - 10 x EQL); 50 (10 - 30 x EQL); 50 (> 30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Lab Report Number			ES2336664
Field ID			
Matrix Type			Soil
Date			23 Oct 2023
	Unit	EQL	
TRH			
C6-C10	mg/kg	10	<10
C6-C10 (F1 minus BTEX)	mg/kg	10	<10
BTEX			
Naphthalene (BTEX)	mg/kg	1	<1
Benzene	mg/kg	0.2	<0.2
Toluene	mg/kg	0.5	<0.5
Ethylbenzene	mg/kg	0.5	<0.5
Xylene (m & p)	mg/kg	0.5	<0.5
Xylene (o)	mg/kg	0.5	<0.5
Xylene Total	mg/kg	0.5	<0.5
Total BTEX	mg/kg	0.2	<0.2

Lab Report Number			ES2336664
Field ID			RB01
Matrix Type			Water
Date			23 Oct 2023
	Unit	EQL	
TRH			
C10-C16 (F2 minus Naphthalene)	µg/L	100	<100
C6-C10	µg/L	20	<20
C6-C10 (F1 minus BTEX)	µg/L	20	<20
C10-C16	µg/L	100	<100
C10-C40 (Sum of total)	µg/L	100	<100
C34-C40	µg/L	100	<100
C16-C34	µg/L	100	<100
BTEX			
Naphthalene (BTEX)	mg/L	0.005	<0.005
Benzene	µg/L	1	<1
Toluene	µg/L	2	<2
Ethylbenzene	µg/L	2	<2
Xylene (m & p)	µg/L	2	<2
Xylene (o)	µg/L	2	<2
Xylene Total	µg/L	2	<2
Total BTEX	µg/L	1	<1
Metals			
Arsenic	mg/L	0.001	<0.001
Cadmium	mg/L	0.0001	<0.0001
Chromium (VI)	mg/L	0.001	<0.001
Copper	mg/L	0.001	<0.001
Lead	mg/L	0.001	<0.001
Mercury	mg/L	0.0001	<0.0001
Nickel	mg/L	0.001	<0.001
Zinc	mg/L	0.005	<0.005
PAH			
Acenaphthene	µg/L	1	<1.0
Acenaphthylene	µg/L	1	<1.0
Anthracene	µg/L	1	<1.0
Benz(a)anthracene	µg/L	1	<1.0
Benzo(a) pyrene	µg/L	0.5	<0.5
Benzo(b+j)fluoranthene	mg/L	0.001	<0.0010
Benzo(g,h,i)perylene	µg/L	1	<1.0
Benzo(k)fluoranthene	µg/L	1	<1.0
Chrysene	µg/L	1	<1.0
Dibenz(a,h)anthracene	µg/L	1	<1.0
Fluoranthene	µg/L	1	<1.0
Fluorene	µg/L	1	<1.0
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1.0
Naphthalene	µg/L	1	<1.0
Phenanthrene	µg/L	1	<1.0
Pyrene	µg/L	1	<1.0
Benzo(a)pyrene TEQ calc (Zero)	mg/L	0.0005	<0.0005
PAHs (Sum of total)	µg/L	0.5	<0.5

Appendix A

SITE PHOTOGRAPHS

**Plate 1**

Description:
General Site overview. Thick dense grass surface covering majority of the Site.

Date:
23/10/2023

**Plate 2**

Description:
Shed with two (2) shipping containers.

Date:
23/10/2023



Plate 3

Description:
Shipping container housed empty tubs and general rubbish.

Date:
23/10/2023



Plate 4

Description:
Anthropogenic material in the form of Wooden pallets, plastic tubing and 1,000 L liquid container.

Date:
23/10/2023



Plate 5

Description:

One of several bathtubs placed around lot, assumed they were used for drinking water for livestock.

Date:

23/10/2023



Plate 6

Description:

Material generally comprised silty clay, brown / red, dry and stiff.

Date:

23/10/2023



Plate 7

Description:
Former grow pots observed in the southwestern portion of the Site.

Date:
23/10/2023



Plate 8

Description:
Skip bin at front of property containing fencing gear, vegetation and general rubbish.

Date:
23/10/2023



Plate 9

Description:

Test pit investigations on-site generally comprised homogenous material.

Date:

23/10/2023



Plate 10

Description:

TP02_0.5. CLAY, medium plasticity, reddish brown, dry and firm.

Date:

23/10/2023

	Plate 11 Description: TP04_0.1. Fill: clayey sand, low plasticity, medium grained, yellowish grey, dry and loose. Date: 23/10/2023
	Plate 12 Description: TP16_0.7. sandy CLAY, medium plasticity, red with grey mottling, dry and stiff. Date: 23/10/2023

Appendix B

SOIL LOGS

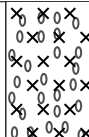
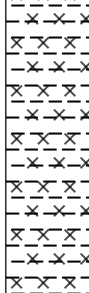
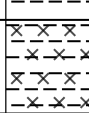
ENVIRONMENTAL LOG: TP01

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Gravelly SILT</u> Gravelly SILT, Brown, fine, dry, subangular		TP01_0.1	B	Anthropogenic material observed in the form of plastic bags.
		0.3 m				Natural @ 0.3 mBGL
1		<u>Silty CLAY</u> Silty CLAY, low plasticity, fine to medium grain, brown to reddish brown, soft, dry		TP01_0.5	B	Colour transition from brown to reddish brown
2						
3						
	1	<u>Silty CLAY</u> Silty CLAY, intermediate plasticity, red with grey mottling, firm, dry		TP01_1.0	B	
		1.2 m				
4						
5						
6						
	2	Target depth was reached at 2 m.				
7						
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

ENVIRONMENTAL LOG: TP02

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY: ZW

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Sandy SILT</u> Sandy SILT, fine to medium grain, brown, dry		TP02_0.1	B	Topsoil then fill
		0.1 m				
		<u>Silty CLAY</u> Silty CLAY, low plasticity, brownish grey, stiff, dry				Natural
		0.3 m				
1		<u>Silty CLAY</u> Silty CLAY, intermediate plasticity, reddish brown, soft, dry		TP02_0.5	B	
		0.7 m				
2		<u>Silty CLAY</u> Silty CLAY, intermediate plasticity, reddish brown with grey mottling, soft, dry		TP02_1.0	B	
	1	1.3 m				
3		Target depth was reached at 2 m.				
4						
5						
6						
7						
8						
9						
10						

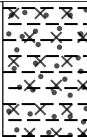
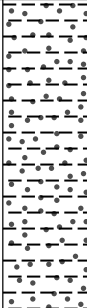
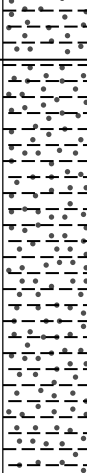
ENVIRONMENTAL LOG: TP03

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty sandy CLAY</u> Silty sandy CLAY, low plasticity, fine to medium grain, medium dense, brownish grey, firm, dry		TP03_0.1	B	Topsoil
		0.3 m				Fill
1		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, reddish brown with grey mottling firm, dry		TP03_0.5	B	
2						
3	1	1.1 m		TP03_1.0	B	
4		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, reddish brown with grey mottling, soft, dry				
5						
6						
7	2	2 m				
		Target depth was reached at 2 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

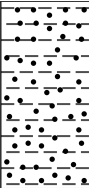
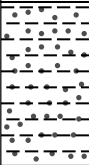
ENVIRONMENTAL LOG: TP04

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations	
FT	M			No.	Type		
Ground Surface at (m)							
0	0	<u>Clayey SAND</u> Clayey SAND, fine to medium grain, low plasticity, yellowish grey, firm, dry		TP04_0.1	B	Natural	
1		0.4 m					
		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, yellow with grey mottling, firm, dry			TP04_0.5	B	Iron stone inclusion
2		0.75 m					
		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, brown with white mottling, firm, dry		TP04_1.0	B		
3	1	1.4 m					
4		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, orange with white mottling, very stiff, dry					Sandstone alluvial inclusions
5		2 m					
6		2 m					
7		Target depth was reached at 2 m.					
8							
9							
3							

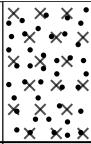
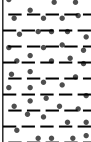
ENVIRONMENTAL LOG: TP05

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain, brown, loose, dry		TP05_0.1	B	Natural
		0.3 m				
1		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, orangey brown, stiff, dry				
		0.7 m		TP05_0.5	B	
2		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, reddish brown with grey mottling, firm, dry				
		1.5 m				
3	1					
4						
5						
6						
7	2	Target depth was reached at 2 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

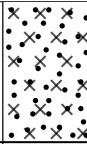
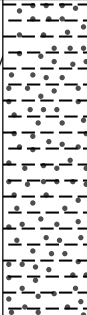
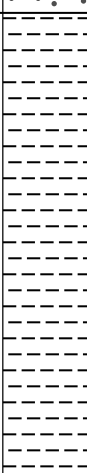
ENVIRONMENTAL LOG: TP06

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: Pat

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain, dark brown, loose, dry		TP06_0.1	B	Natural
	0.3 m					
1		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, red with grey mottling, firm, dry		TP06_0.5	B	
2						
3	1	<u>CLAY</u> CLAY, intermediate plasticity, reddish brown, firm, dry				
4						
5						
6						
7	2	Target depth was reached at 2 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

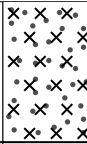
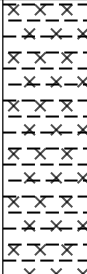
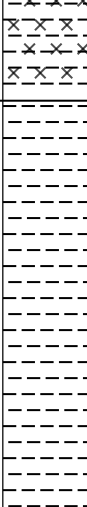
ENVIRONMENTAL LOG: TP07

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: Troy

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Sandy SILT</u> Sandy SILT, fine to medium granulation, firm density, dark brown, dry		TP07_0.1	B	Natural
		0.3 m				
1		<u>Silty CLAY</u> Silty CLAY, low plasticity, reddish brown, stiff, dry		TP07_0.5	B	
2						Increasing plasticity with depth
3	1	<u>CLAY</u> CLAY, intermediate plasticity, red with grey mottling, stiff, dry		TP07_1.0	B	
		1.1 m				
4						
5						
6						
	2	2 m				
7		Target depth was reached at 2 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

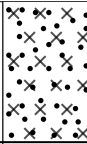
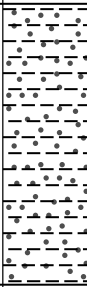
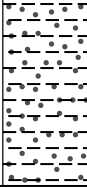
ENVIRONMENTAL LOG: TP08

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY:

TOTAL DEPTH: 1.9
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium granulation, yellowish brown, loose, dry				Transitions to Red with grey mottling
		0.3 m				
1		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, reddish brown, firm, dry				
		0.5 m				
2		<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, reddish brown with white mottling, firm, dry				
		1.1 m				
3	1	<u>Sandy CLAY</u> Sandy CLAY, low plasticity, fine to medium grain, white mottling reddish brown, soft, dry				
		1.5 m				
4						Sandstone weathered inclusions
5						
6						
7	2	Target depth was reached at 1.9 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

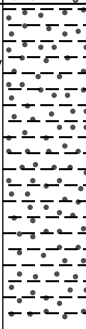
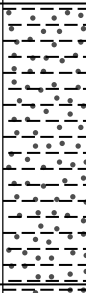
ENVIRONMENTAL LOG: TP09

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	Gravelly SAND Gravelly SAND, medium to coarse grain, light brown, poorly graded, subangular, dense, dry		TP09_0.1	B	Tiling and sheet material
1						
		0.5 m		TP09_0.5	B	Fill to 0.5
2		Sandy CLAY Sandy CLAY, high plasticity, fine grain, reddish brown, stiff, dry				
3						
	1	1.2 m				
4		Sandy CLAY Sandy CLAY, high plasticity, fine to medium grain, reddish-brown , firm, dry				
5						
		1.8 m				
6		Sandy CLAY Sandy CLAY, high plasticity, fine to medium grain, reddish brown with grey mottling, firm, dry				
7						
	2	2 m				
8		Target depth was reached at 2 m.				
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

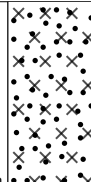
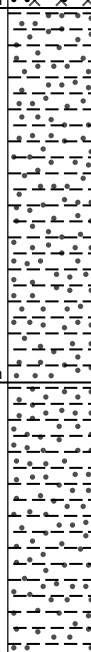
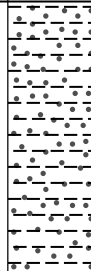
ENVIRONMENTAL LOG: TP10

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, yellowish dark-brown, fine to medium grain size, loose, dry		TP10_0.1	B	Fill layer
1		0.4 m				
2		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine to medium grain, orangey brown, stiff, dry		TP10_0.5	B	
3	1	1.2 m				
4		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine grain, reddish brown with grey mottling, firm, dry				
5		1.8 m				
6						
7	2	Target depth was reached at 2 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

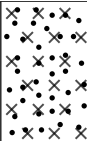
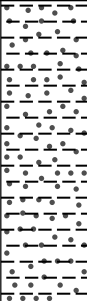
ENVIRONMENTAL LOG: TP11

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	Silty SAND Silty SAND, Brownish grey, fine to medium grain, loose, dry		TP11_0.1	B	Fill
		0.3 m				
1		Sandy CLAY Sandy CLAY, low plasticity, fine to medium grain, reddish brown mottled grey, stiff, dry		TP11_0.5	B	
		1.05 m				
2		Sandy CLAY Sandy CLAY, high plasticity, fine grain, light grey with brown mottling, soft, dry				
		1.7 m				
6						
2		Target depth was reached at 2 m.				
7						
8						
9						
3						

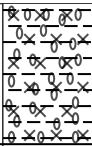
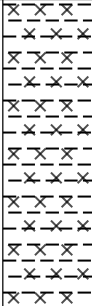
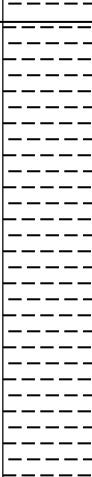
ENVIRONMENTAL LOG: TP12

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: Troy

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty gravelly CLAY</u> Silty gravelly CLAY, low plasticity, subangular, brown, fine to medium grain size, very stiff, dry		TP12_0.1	B	Natural
1	0.3 m	<u>Silty CLAY</u> Silty CLAY, low plasticity, brown with red mottling, very stiff, dry		TP12_0.5	B	
2						Extremely weathered rock
3						
4						
5						
6						
7	1	<u>CLAY</u> CLAY, intermediate plasticity, Grey with brown/red mottling, stiff, dry				
8	2 m					
9		Target depth was reached at 2 m.				
10						
11						
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Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

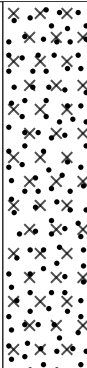
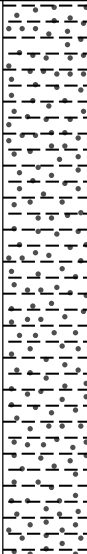
ENVIRONMENTAL LOG: TP13

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain, dark brown, loose, dry		TP13_0.1	B	Fill, anthro tiles plastics inclusions
1						
2						
		0.8 m		TP13_0.5	B	Natural
3	1	<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine to medium grain, orange brown, soft, dry				
4						
5						
6						
		2 m				
7		Target depth was reached at 2 m.				
8						
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

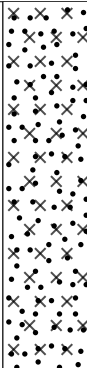
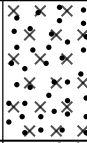
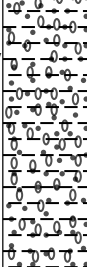
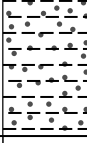
ENVIRONMENTAL LOG: TP14

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2.4
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain size, dark-brown, medium dense, dry		TP14_0.1	B	Anthro: Plastic pvc, brick inclusion
1				TP14_0.5	B	
2		0.8 m				
3		<u>Silty SAND</u> Silty SAND, medium grain, dark brown, loose, dry				tiles bricks plastics
1		1.1 m				
4		<u>Sandy gravelly CLAY</u> Sandy gravelly CLAY, low plasticity, subangular, medium grain, brown, firm, dry		TP14_1.0	B	Natural
5		1.7 m				
6		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine to medium grain, brown with reddish greenish mottling , firm, dry				
2		2 m				
7						
8		Target depth was reached at 2.4 m.				
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

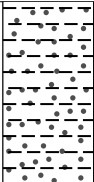
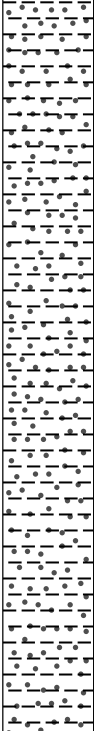
ENVIRONMENTAL LOG: TP15

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations	
FT	M			No.	Type		
Ground Surface at (m)							
0	0	<u>Sandy CLAY</u> Sandy CLAY, intermediate plasticity, fine to medium grain, brown, soft, dry		TP15_0.1	B	Fill ends	
1				TP15_0.3	B		
	0.4 m			TP15_0.5	B		
		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine to medium grain, red with grey mottling, soft, dry				plastics brickwork pvc tiling	
2							
3							
	1						
4							
5							
6							
	2						
7		Target depth was reached at 2 m.					
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Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

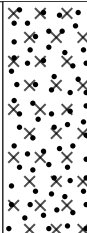
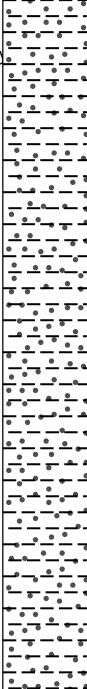
ENVIRONMENTAL LOG: TP16

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain, dark brown, dense, dry		TP16_0.1	B	Natural
1				TP16_0.5	B	
2		<u>Sandy CLAY</u> Sandy CLAY, intermediate plasticity, fine to medium grain, grey with red mottling, stiff, dry				
3	1					
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7	2	Target depth was reached at 2 m.				
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ENVIRONMENTAL LOG: TP17

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE:October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY:ZW

TOTAL DEPTH:2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

[illegible]

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

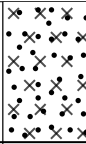
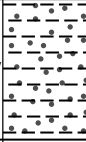
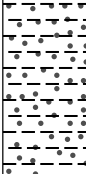
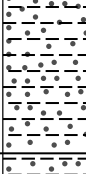
ENVIRONMENTAL LOG: TP18

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	Silty SAND Silty SAND, fine to medium grain, dark-brown, dense, dry		TP18_0.1	B	Natural
		0.3 m				
1		Sandy CLAY Sandy CLAY, high plasticity, fine to medium grain, light brown, soft, dry		TP18_0.5	B	
		0.6 m				
2		Sandy CLAY Sandy CLAY, high plasticity, fine to medium grain, light brown yellow and light grey mottling, soft, dry				Sandstone inclusion
		1.3 m				
3	1	Sandy CLAY Sandy CLAY, high plasticity, fine grain, pale grey with reddish mottling, soft, wet				
		2 m				
4		Target depth was reached at 2 m.				
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10	3					

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

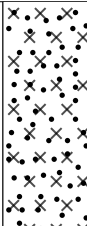
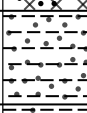
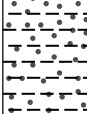
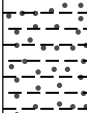
ENVIRONMENTAL LOG: TP19

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain, brown, dense, dry		TP19_0.1	B	Natural
1		0.5 m		TP19_0.5	B	
2		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine to medium grain, brown, soft, dry				ironstone/sandstone incisions
3		0.7 m				
4		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine grain, brown, soft, dry				
5		1.5 m				
6		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine grain, grey with light brown mottling, soft, dry				ironstone/sandstone incisions
7		2 m				
8		Target depth was reached at 2 m.				
9						
3						

Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

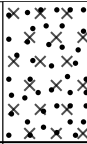
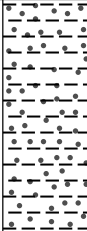
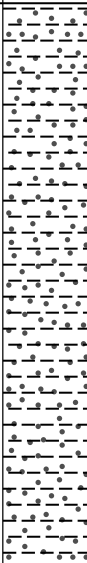
ENVIRONMENTAL LOG: TP20

PROJECT NO.: EP3390
PROJECT NAME: Badgery's Creek
CLIENT: EMKC
ADDRESS: 230 Martin Road Badgerys Creek

DRILLING DATE: October 23, 2023
DRILLING CO.:
DRILL METHOD:
DRILLER:
LOGGED BY: ZW

TOTAL DEPTH: 2
COORDINATES: 
COORD. SYSTEM:
GROUND ELEV.:
CHECKED BY:

NOTES:

Depth		Material Description	Graphic	Samples		Additional Observations
FT	M			No.	Type	
Ground Surface at (m)						
0	0	<u>Silty SAND</u> Silty SAND, fine to medium grain, dark brown, dense, dry		TP20_0.1	B	Natural
	0.3 m					
1		<u>Sandy CLAY</u> Sandy CLAY, intermediate plasticity, fine to medium grain, reddish brown, stiff, dry		TP20_0.5	B	
	0.8 m					
2		<u>Sandy CLAY</u> Sandy CLAY, high plasticity, fine to medium rain, reddish brown with grey mottling, soft, dry				
	2 m					
3	1	Target depth was reached at 2 m.				
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Disclaimer: This log is intended for environmental not geotechnical purposes.

SHEET: 1 of 1

Appendix C

NATA ACCREDITED LABORATORY REPORTS

EP Risk Management (NSW)
80 Mount Street,
North Sydney
NSW 2060



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Troy Chatman**

Report **1038508-S**

Project name

Project ID **EP3390**

Received Date **Nov 07, 2023**

Client Sample ID			TRP01
Sample Matrix			Soil
Eurofins Sample No.			S23- Oc0063461
Date Sampled			Oct 23, 2023
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	98
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5

Client Sample ID			TRP01
Sample Matrix			Soil
Eurofins Sample No.			S23- Oc0063461
Date Sampled			Oct 23, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	92
p-Terphenyl-d14 (surr.)	1	%	97
Organochlorine Pesticides			
Chlordanes - Total	0.1	mg/kg	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05
a-HCH	0.05	mg/kg	< 0.05
Aldrin	0.05	mg/kg	< 0.05
b-HCH	0.05	mg/kg	< 0.05
d-HCH	0.05	mg/kg	< 0.05
Dieldrin	0.05	mg/kg	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05
Endrin	0.05	mg/kg	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05
Heptachlor	0.05	mg/kg	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05
Toxaphene	0.5	mg/kg	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1
Dibutylchloroendate (surr.)	1	%	150
Tetrachloro-m-xylene (surr.)	1	%	103
Organophosphorus Pesticides			
Azinphos-methyl	0.2	mg/kg	< 0.2
Bolstar	0.2	mg/kg	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2
Coumaphos	2	mg/kg	< 2
Demeton-S	0.2	mg/kg	< 0.2
Demeton-O	0.2	mg/kg	< 0.2
Diazinon	0.2	mg/kg	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2

Client Sample ID			TRP01
Sample Matrix			Soil
Eurofins Sample No.			S23- Oc0063461
Date Sampled			Oct 23, 2023
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Dimethoate	0.2	mg/kg	< 0.2
Disulfoton	0.2	mg/kg	< 0.2
EPN	0.2	mg/kg	< 0.2
Ethion	0.2	mg/kg	< 0.2
Ethoprop	0.2	mg/kg	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2
Fenthion	0.2	mg/kg	< 0.2
Malathion	0.2	mg/kg	< 0.2
Merphos	0.2	mg/kg	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2
Mevinphos	0.2	mg/kg	< 0.2
Monocrotophos	2	mg/kg	< 2
Naled	0.2	mg/kg	< 0.2
Omethoate	2	mg/kg	< 2
Phorate	0.2	mg/kg	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2
Ronnel	0.2	mg/kg	< 0.2
Terbufos	0.2	mg/kg	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2
Tokuthion	0.2	mg/kg	< 0.2
Trichloronate	0.2	mg/kg	< 0.2
Triphenylphosphate (surr.)	1	%	120
Polychlorinated Biphenyls			
Aroclor-1016	0.1	mg/kg	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1
Total PCB*	0.1	mg/kg	< 0.1
Dibutylchloredate (surr.)	1	%	150
Tetrachloro-m-xylene (surr.)	1	%	103
Heavy Metals			
Arsenic	2	mg/kg	7.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	24
Copper	5	mg/kg	17
Lead	5	mg/kg	17
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	7.0
Zinc	5	mg/kg	18
Sample Properties			
% Moisture	1	%	16

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 13, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 13, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 13, 2023	14 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Nov 13, 2023	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Nov 13, 2023	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Nov 13, 2023	28 Days
Eurofins Suite B15			
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Nov 13, 2023	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Nov 13, 2023	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Nov 13, 2023	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Nov 07, 2023	14 Days

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

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

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35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

Company Name: EP Risk Management (NSW)
Address: 80 Mount Street,
North Sydney
NSW 2060

Order No.:
Report #: 1038508
Phone: 02 99225021
Fax:

Received: Nov 7, 2023 2:30 PM
Due: Nov 14, 2023
Priority: 5 Day
Contact Name: Troy Chatman

Project Name:
Project ID: EP3390

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail

Sydney Laboratory - NATA # 1261 Site # 18217

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID	Eurofins Suite B15	Moisture Set	Eurofins Suite B7
1	TRP01	Oct 23, 2023		Soil	S23-Oc0063461	X	X	X
Test Counts						1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry weight basis unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion unless otherwise stated.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is 7 days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30%; however the following acceptance guidelines are equally

applicable: Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR: RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%

PFAS field samples that contain surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported, have been reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	92			70-130	Pass	
TRH C10-C14	%	100			70-130	Pass	
TRH C6-C10	%	93			70-130	Pass	
TRH >C10-C16	%	100			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	95			70-130	Pass	
Toluene	%	95			70-130	Pass	
Ethylbenzene	%	94			70-130	Pass	
m&p-Xylenes	%	73			70-130	Pass	
o-Xylene	%	98			70-130	Pass	
Xylenes - Total*	%	81			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	105			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	127			70-130	Pass	
Acenaphthylene	%	121			70-130	Pass	
Anthracene	%	113			70-130	Pass	
Benz(a)anthracene	%	117			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	%	103			70-130	Pass	
Benzo(g,h,i)perylene	%	108			70-130	Pass	
Benzo(k)fluoranthene	%	129			70-130	Pass	
Chrysene	%	112			70-130	Pass	
Dibenz(a,h)anthracene	%	122			70-130	Pass	
Fluoranthene	%	119			70-130	Pass	
Fluorene	%	117			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	118			70-130	Pass	
Naphthalene	%	119			70-130	Pass	
Phenanthrene	%	91			70-130	Pass	
Pyrene	%	124			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	126			70-130	Pass	
4,4'-DDD	%	116			70-130	Pass	
4,4'-DDE	%	125			70-130	Pass	
4,4'-DDT	%	129			70-130	Pass	
a-HCH	%	120			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin				%	123			70-130	Pass	
b-HCH				%	112			70-130	Pass	
d-HCH				%	114			70-130	Pass	
Dieldrin				%	125			70-130	Pass	
Endosulfan I				%	123			70-130	Pass	
Endosulfan II				%	105			70-130	Pass	
Endosulfan sulphate				%	108			70-130	Pass	
Endrin				%	115			70-130	Pass	
Endrin aldehyde				%	124			70-130	Pass	
Endrin ketone				%	106			70-130	Pass	
g-HCH (Lindane)				%	112			70-130	Pass	
Heptachlor				%	116			70-130	Pass	
Heptachlor epoxide				%	126			70-130	Pass	
Hexachlorobenzene				%	127			70-130	Pass	
Methoxychlor				%	110			70-130	Pass	
LCS - % Recovery										
Organophosphorus Pesticides										
Diazinon				%	113			70-130	Pass	
Dimethoate				%	116			70-130	Pass	
Ethion				%	125			70-130	Pass	
Fenitrothion				%	109			70-130	Pass	
Methyl parathion				%	118			70-130	Pass	
Mevinphos				%	113			70-130	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls										
Aroclor-1016				%	117			70-130	Pass	
Aroclor-1260				%	121			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	104			80-120	Pass	
Cadmium				%	101			80-120	Pass	
Chromium				%	107			80-120	Pass	
Copper				%	108			80-120	Pass	
Lead				%	106			80-120	Pass	
Mercury				%	107			80-120	Pass	
Nickel				%	105			80-120	Pass	
Zinc				%	102			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Total Recoverable Hydrocarbons					Result 1					
TRH C6-C9	N23-No0025527	NCP	%	82			70-130	Pass		
TRH C10-C14	S23-No0024177	NCP	%	71			70-130	Pass		
TRH C6-C10	N23-No0025527	NCP	%	82			70-130	Pass		
TRH >C10-C16	S23-No0000055	NCP	%	115			70-130	Pass		
Spike - % Recovery										
BTEX					Result 1					
Benzene	N23-No0025527	NCP	%	95			70-130	Pass		
Toluene	N23-No0025527	NCP	%	92			70-130	Pass		
Ethylbenzene	N23-No0025527	NCP	%	90			70-130	Pass		
m&p-Xylenes	N23-No0025527	NCP	%	94			70-130	Pass		
o-Xylene	N23-No0025527	NCP	%	90			70-130	Pass		
Xylenes - Total*	N23-No0025527	NCP	%	93			70-130	Pass		
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	N23-No0025527	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-No0022778	NCP	%	121			70-130	Pass	
4.4'-DDD	S23-No0022778	NCP	%	99			70-130	Pass	
4.4'-DDE	S23-No0022778	NCP	%	109			70-130	Pass	
4.4'-DDT	S23-No0022778	NCP	%	115			70-130	Pass	
a-HCH	S23-No0022778	NCP	%	93			70-130	Pass	
Aldrin	S23-No0022778	NCP	%	113			70-130	Pass	
b-HCH	S23-No0022778	NCP	%	78			70-130	Pass	
d-HCH	S23-No0022778	NCP	%	91			70-130	Pass	
Dieldrin	S23-No0022778	NCP	%	120			70-130	Pass	
Endosulfan I	S23-No0022778	NCP	%	120			70-130	Pass	
Endosulfan II	S23-No0022778	NCP	%	114			70-130	Pass	
Endosulfan sulphate	S23-No0022778	NCP	%	122			70-130	Pass	
Endrin	S23-No0022778	NCP	%	122			70-130	Pass	
Endrin aldehyde	S23-No0022778	NCP	%	116			70-130	Pass	
Endrin ketone	S23-No0016052	NCP	%	96			70-130	Pass	
g-HCH (Lindane)	S23-No0022778	NCP	%	113			70-130	Pass	
Heptachlor	S23-No0022778	NCP	%	113			70-130	Pass	
Heptachlor epoxide	S23-No0022778	NCP	%	113			70-130	Pass	
Hexachlorobenzene	S23-No0022778	NCP	%	87			70-130	Pass	
Methoxychlor	S23-No0022778	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S23-No0022837	NCP	%	130			70-130	Pass	
Dimethoate	S23-No0022837	NCP	%	79			70-130	Pass	
Ethion	S23-No0022837	NCP	%	83			70-130	Pass	
Methyl parathion	S23-No0022837	NCP	%	71			70-130	Pass	
Mevinphos	S23-No0022837	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S23-No0022778	NCP	%	82			70-130	Pass	
Aroclor-1260	S23-No0022778	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-No0025527	NCP	%	103			75-125	Pass	
Cadmium	N23-No0025527	NCP	%	100			75-125	Pass	
Chromium	N23-No0025527	NCP	%	102			75-125	Pass	
Copper	N23-No0025527	NCP	%	93			75-125	Pass	
Lead	N23-No0025527	NCP	%	86			75-125	Pass	
Mercury	N23-No0025527	NCP	%	104			75-125	Pass	
Nickel	N23-No0025527	NCP	%	94			75-125	Pass	
Zinc	S23-No0022778	NCP	%	95			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	N23-No0025530	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-No0021748	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-No0021748	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-No0021748	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	N23-No0025530	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-No0021748	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-No0021748	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-No0021748	NCP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	N23-No0025530	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	N23-No0025530	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	N23-No0025530	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	N23-No0025530	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	N23-No0025530	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	N23-No0025530	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	N23-No0025530	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S23-No0017624	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S23-No0017624	NCP	mg/kg	< 0.5	0.6	70	30%	Fail
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S23-No0022788	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S23-No0012604	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S23-No0022788	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S23-No0022788	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S23-No0022788	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S23-No0022788	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S23-No0022788	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-No0025530	NCP	mg/kg	8.9	7.8	13	30%	Pass
Cadmium	N23-No0025530	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-No0025530	NCP	mg/kg	6.4	7.1	9.8	30%	Pass
Copper	N23-No0025530	NCP	mg/kg	17	18	4.5	30%	Pass
Lead	N23-No0025530	NCP	mg/kg	34	36	5.3	30%	Pass
Mercury	N23-No0025530	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-No0025530	NCP	mg/kg	< 5	5.8	31	30%	Fail
Zinc	N23-No0025530	NCP	mg/kg	70	72	3.5	30%	Pass

Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	S23-No0028245	NCP	%	15	16	7.4	30%	Pass

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please [click here](#).

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



CERTIFICATE OF ANALYSIS

Work Order : **ES2336664**
Client : **EP RISK MANAGEMENT**
Contact : TROY CHATMAN
Address : LEVEL 13 Suite 1301, 80 Mount Street
NORTH SYDNEY 2060
Telephone : ----
Project : EP3390
Order number : ----
C-O-C number : ----
Sampler : PADRAIG KEATING, TROY CHATMAN
Site : ----
Quote number : ES23EPRISK0002 - ES PRIMARY WORK ONLY
No. of samples received : 53
No. of samples analysed : 30

Page : 1 of 29
Laboratory : Environmental Division Sydney
Contact : Jason Dighton
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61-2-8784 8555
Date Samples Received : 24-Oct-2023 17:28
Date Analysis Commenced : 25-Oct-2023
Issue Date : 01-Nov-2023 15:46



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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	Position	Accreditation Category
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW



General Comments

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

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

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

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

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

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

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

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP071: Results of sample TP15_0.1 have been confirmed by re-extraction and re-analysis.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1	TP02_0.1	TP02_0.5	TP03_0.1	TP04_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-001	ES2336664-004	ES2336664-005	ES2336664-007	ES2336664-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	3.3	----	12.4	12.9	11.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	No
Asbestos (Trace)	1332-21-4	-	-	No	No	----	No	No
Asbestos Type	1332-21-4	-	--	-	-	----	-	-
Sample weight (dry)	-----	0.01	g	49.2	61.5	----	42.4	56.7
APPROVED IDENTIFIER:	-----	-	--	A. SMYLIE	A. SMYLIE	----	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	-----	-	--	No	No	----	No	No
Organic Fibre	-----	-	--	No	No	----	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	----	9	11	9
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	25	----	23	21	17
Copper	7440-50-8	5	mg/kg	8	----	18	18	14
Lead	7439-92-1	5	mg/kg	16	----	15	22	16
Nickel	7440-02-0	2	mg/kg	2	----	4	3	2
Zinc	7440-66-6	5	mg/kg	7	----	11	9	13
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1	TP02_0.1	TP02_0.5	TP03_0.1	TP04_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-001	ES2336664-004	ES2336664-005	ES2336664-007	ES2336664-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP01_0.1	TP02_0.1	TP02_0.5	TP03_0.1	TP04_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-001	ES2336664-004	ES2336664-005	ES2336664-007	ES2336664-010
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.1	TP02_0.1	TP02_0.5	TP03_0.1	TP04_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-001	ES2336664-004	ES2336664-005	ES2336664-007	ES2336664-010
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		99.8	----	102	92.6	107
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		93.4	----	94.3	87.8	102
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		89.6	----	88.1	82.4	98.0
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		87.7	----	81.0	86.3	94.6
2-Chlorophenol-D4	93951-73-6	0.5	%		91.0	----	87.9	91.3	99.4
2,4,6-Tribromophenol	118-79-6	0.5	%		55.0	----	65.0	67.7	77.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.4	----	83.6	87.1	95.1
Anthracene-d10	1719-06-8	0.5	%		88.6	----	82.9	87.0	99.7
4-Terphenyl-d14	1718-51-0	0.5	%		98.1	----	94.8	100	116
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		105	----	107	109	112
Toluene-D8	2037-26-5	0.2	%		93.1	----	87.5	84.1	86.1
4-Bromofluorobenzene	460-00-4	0.2	%		94.5	----	91.2	88.5	87.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1	TP08_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-013	ES2336664-014	ES2336664-015	ES2336664-017	ES2336664-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	5.0	12.0	15.3	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos (Trace)	1332-21-4	-	-	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Sample weight (dry)	----	0.01	g	43.9	----	53.2	42.6	51.3
APPROVED IDENTIFIER:	----	-	--	A. SMYLLIE	----	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE
Synthetic Mineral Fibre	----	-	--	No	----	No	No	No
Organic Fibre	----	-	--	No	----	No	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	6	7	8	----
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	----	25	19	26	----
Copper	7440-50-8	5	mg/kg	----	11	16	17	----
Lead	7439-92-1	5	mg/kg	----	16	16	16	----
Nickel	7440-02-0	2	mg/kg	----	3	5	4	----
Zinc	7440-66-6	5	mg/kg	----	10	17	14	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1	TP08_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-013	ES2336664-014	ES2336664-015	ES2336664-017	ES2336664-020
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
4,4'-DDE	72-55-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
4,4'-DDD	72-54-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
4,4'-DDT	50-29-3	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	<0.05	<0.05	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1	TP08_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-013	ES2336664-014	ES2336664-015	ES2336664-017	ES2336664-020
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	1.2	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP05_0.1	TP05_0.5	TP06_0.1	TP07_0.1	TP08_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-013	ES2336664-014	ES2336664-015	ES2336664-017	ES2336664-020
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	103	108	92.7	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	96.1	98.1	87.4	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	90.2	94.4	82.5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	88.1	93.4	93.3	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	92.6	97.6	93.9	----
2,4,6-Tribromophenol	118-79-6	0.5	%		----	63.7	67.7	75.5	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	86.5	91.8	90.6	----
Anthracene-d10	1719-06-8	0.5	%		----	93.3	95.8	96.4	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	106	112	112	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		----	124	122	89.9	----
Toluene-D8	2037-26-5	0.2	%		----	87.3	100.0	96.3	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	91.4	94.8	97.6	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08_0.5	TP09_0.1	TP10_0.1	TP11_0.1	TP12_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-021	ES2336664-023	ES2336664-025	ES2336664-027	ES2336664-029
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		15.0	11.5	13.1	12.2	13.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	No	No	No	No
Asbestos (Trace)	1332-21-4	-	-		----	No	No	No	No
Asbestos Type	1332-21-4	-	--		----	-	-	-	-
Sample weight (dry)	----	0.01	g		----	37.0	46.6	45.4	43.7
APPROVED IDENTIFIER:	----	-	--		----	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	-	--		----	No	No	No	No
Organic Fibre	----	-	--		----	No	No	No	No
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		10	13	7	8	6
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		16	47	18	17	17
Copper	7440-50-8	5	mg/kg		16	16	19	19	26
Lead	7439-92-1	5	mg/kg		15	36	18	11	14
Nickel	7440-02-0	2	mg/kg		<2	6	11	2	4
Zinc	7440-66-6	5	mg/kg		6	24	35	12	25
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP08_0.5	TP09_0.1	TP10_0.1	TP11_0.1	TP12_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-021	ES2336664-023	ES2336664-025	ES2336664-027	ES2336664-029
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08_0.5	TP09_0.1	TP10_0.1	TP11_0.1	TP12_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-021	ES2336664-023	ES2336664-025	ES2336664-027	ES2336664-029
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	-----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	-----	0.5	mg/kg		0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	-----	0.5	mg/kg		1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	-----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	-----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	-----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	-----	50	mg/kg		<50	<50	<50	<50	<50



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08_0.5	TP09_0.1	TP10_0.1	TP11_0.1	TP12_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-021	ES2336664-023	ES2336664-025	ES2336664-027	ES2336664-029
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		118	93.8	104	100	107
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		102	84.9	95.8	95.8	99.5
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		87.1	76.2	88.2	89.5	89.0
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.1	84.9	84.3	77.0	87.4
2-Chlorophenol-D4	93951-73-6	0.5	%		96.7	90.3	89.0	82.8	92.8
2,4,6-Tribromophenol	118-79-6	0.5	%		73.4	65.6	60.6	57.4	69.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		90.9	84.2	85.7	77.1	86.5
Anthracene-d10	1719-06-8	0.5	%		94.8	88.8	88.4	80.1	87.0
4-Terphenyl-d14	1718-51-0	0.5	%		113	103	103	88.2	99.7
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		103	122	118	106	107
Toluene-D8	2037-26-5	0.2	%		79.3	97.4	95.0	82.0	84.1
4-Bromofluorobenzene	460-00-4	0.2	%		80.2	84.6	92.4	81.8	83.3



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP13_0.1	TP14_0.1	TP14_0.5	TP15_0.1	TP16_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-031	ES2336664-033	ES2336664-034	ES2336664-036	ES2336664-039
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	6.7	----	9.5	12.9	12.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	No	No
Asbestos (Trace)	1332-21-4	-	-	No	No	----	No	No
Asbestos Type	1332-21-4	-	--	-	-	----	-	-
Sample weight (dry)	-----	0.01	g	43.5	44.5	----	59.7	46.1
APPROVED IDENTIFIER:	-----	-	--	A. SMYLIE	A. SMYLIE	----	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	-----	-	--	No	No	----	No	No
Organic Fibre	-----	-	--	No	No	----	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	----	9	12	7
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	----	20	40	20
Copper	7440-50-8	5	mg/kg	20	----	22	24	25
Lead	7439-92-1	5	mg/kg	49	----	28	27	20
Nickel	7440-02-0	2	mg/kg	6	----	12	6	5
Zinc	7440-66-6	5	mg/kg	80	----	60	74	32
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP13_0.1	TP14_0.1	TP14_0.5	TP15_0.1	TP16_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-031	ES2336664-033	ES2336664-034	ES2336664-036	ES2336664-039
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP13_0.1	TP14_0.1	TP14_0.5	TP15_0.1	TP16_0.1
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-031	ES2336664-033	ES2336664-034	ES2336664-036	ES2336664-039
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	1.3	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	2.3	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	1.8	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	0.9	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	0.8	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	<0.5	1.0	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	0.7	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	0.6	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	<0.5	9.4	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	<0.5	0.9	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	0.6	1.2	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	1.2	1.5	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	150	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	150	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	190	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	110	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	300	<50



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP13_0.1	TP14_0.1	TP14_0.5	TP15_0.1	TP16_0.1
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-031	ES2336664-033	ES2336664-034	ES2336664-036	ES2336664-039
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		88.5	----	92.0	82.8	106
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		85.8	----	86.1	82.4	102
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		59.0	----	77.1	70.5	91.7
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		83.2	----	102	80.1	84.7
2-Chlorophenol-D4	93951-73-6	0.5	%		88.5	----	97.0	79.8	93.2
2,4,6-Tribromophenol	118-79-6	0.5	%		53.3	----	74.4	63.6	74.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.5	----	117	79.2	83.2
Anthracene-d10	1719-06-8	0.5	%		83.3	----	114	82.3	86.5
4-Terphenyl-d14	1718-51-0	0.5	%		91.9	----	119	89.6	93.5
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		108	----	112	121	114
Toluene-D8	2037-26-5	0.2	%		87.8	----	89.8	90.8	93.0
4-Bromofluorobenzene	460-00-4	0.2	%		84.0	----	85.7	81.7	87.0



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP17_0.1	TP18_0.1	TP19_0.1	TP20_0.1	TP20_0.5
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-041	ES2336664-043	ES2336664-045	ES2336664-047	ES2336664-048
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	-----	1.0	%	5.8	12.2	8.6	----	15.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	----
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	----
Asbestos Type	1332-21-4	-	--	-	-	-	-	----
Sample weight (dry)	-----	0.01	g	60.9	43.8	46.4	45.1	----
APPROVED IDENTIFIER:	-----	-	--	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	A. SMYLLIE	----
Synthetic Mineral Fibre	-----	-	--	No	No	No	No	----
Organic Fibre	-----	-	--	No	No	No	No	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	10	11	----	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	<1
Chromium	7440-47-3	2	mg/kg	29	24	28	----	16
Copper	7440-50-8	5	mg/kg	16	15	18	----	23
Lead	7439-92-1	5	mg/kg	23	22	28	----	13
Nickel	7440-02-0	2	mg/kg	5	4	8	----	3
Zinc	7440-66-6	5	mg/kg	86	25	30	----	15
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	-----	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ Total Chlordane (sum)	-----	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP17_0.1	TP18_0.1	TP19_0.1	TP20_0.1	TP20_0.5
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-041	ES2336664-043	ES2336664-045	ES2336664-047	ES2336664-048
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TP17_0.1	TP18_0.1	TP19_0.1	TP20_0.1	TP20_0.5
Sampling date / time				23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit	ES2336664-041	ES2336664-043	ES2336664-045	ES2336664-047	ES2336664-048
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	----	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----	1.2
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	<50



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP17_0.1	TP18_0.1	TP19_0.1	TP20_0.1	TP20_0.5
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00
Compound	CAS Number	LOR	Unit		ES2336664-041	ES2336664-043	ES2336664-045	ES2336664-047	ES2336664-048
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		89.9	98.8	86.0	----	93.8
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		87.3	97.6	87.4	----	90.7
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		77.1	85.4	76.1	----	71.8
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		84.5	84.1	82.6	----	86.5
2-Chlorophenol-D4	93951-73-6	0.5	%		88.2	89.0	83.7	----	90.5
2,4,6-Tribromophenol	118-79-6	0.5	%		64.5	69.8	54.7	----	72.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		83.6	85.0	82.3	----	84.2
Anthracene-d10	1719-06-8	0.5	%		86.3	84.4	84.4	----	86.6
4-Terphenyl-d14	1718-51-0	0.5	%		94.7	95.0	93.1	----	95.6
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		112	120	108	----	120
Toluene-D8	2037-26-5	0.2	%		89.2	87.8	79.2	----	86.8
4-Bromofluorobenzene	460-00-4	0.2	%		82.0	82.6	83.1	----	83.3



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	trip blank	trip spike	DUP01	TRIP SPIKE CONTROL	----
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2336664-049	ES2336664-050	ES2336664-051	ES2336664-053	-----
					Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	-----	1.0	%		----	----	14.5	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		----	----	6	----	----
Cadmium	7440-43-9	1	mg/kg		----	----	<1	----	----
Chromium	7440-47-3	2	mg/kg		----	----	20	----	----
Copper	7440-50-8	5	mg/kg		----	----	17	----	----
Lead	7439-92-1	5	mg/kg		----	----	14	----	----
Nickel	7440-02-0	2	mg/kg		----	----	5	----	----
Zinc	7440-66-6	5	mg/kg		----	----	14	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	----	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	mg/kg		----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	-----	0.5	mg/kg		----	----	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	-----	0.5	mg/kg		----	----	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	-----	0.5	mg/kg		----	----	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	-----	10	mg/kg		<10	----	<10	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	trip blank	trip spike	DUP01	TRIP SPIKE CONTROL	----
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2336664-049	ES2336664-050	ES2336664-051	ES2336664-053	-----
					Result	Result	Result	Result	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		----	----	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		----	----	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	6.1	<0.5	6.2	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	7.9	<0.5	8.0	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	8.5	<0.5	8.6	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	3.4	<0.5	3.6	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	25.9	<0.2	26.4	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	11.9	<0.5	12.2	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	91.3	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	83.6	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		----	----	73.2	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	88.4	----	----
Anthracene-d10	1719-06-8	0.5	%		----	----	97.7	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	106	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		91.5	123	109	106	----
Toluene-D8	2037-26-5	0.2	%		95.2	117	105	108	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	trip blank	trip spike	DUP01	TRIP SPIKE CONTROL	----
Sampling date / time					23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	23-Oct-2023 00:00	----
Compound	CAS Number	LOR	Unit		ES2336664-049	ES2336664-050	ES2336664-051	ES2336664-053	-----
					Result	Result	Result	Result	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		96.6	125	108	108	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				RB01	----	----	----	----
Sampling date / time				23-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2336664-052	-----	-----	-----	-----
				Result	----	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	-----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	-----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	-----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	-----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	-----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	-----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	-----	50	µg/L	<50	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RB01	----	----	----	----
Sampling date / time					23-Oct-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2336664-052	-----	-----	-----	-----
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		25.6	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		50.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		43.1	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		70.4	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		86.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		92.5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	2	%		118	----	----	----	----
Toluene-D8	2037-26-5	2	%		108	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		109	----	----	----	----



Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP01_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP02_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP03_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP04_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP05_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP06_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP07_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP08_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP09_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP10_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP11_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP12_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP13_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP14_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP15_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP16_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP17_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP18_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP19_0.1 - 23-Oct-2023 00:00	Soil sample.
EA200: Description	TP20_0.1 - 23-Oct-2023 00:00	Soil sample.



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils



