Phase II - Detailed Site Investigation

LOG – East: Abbotts Road Intersection and Mamre Road, Kemps Creek NSW

Prepared for: AT&L Pty Ltd

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Abbreviations

AAM	Airborne Asbestos Monitoring
ACM	Asbestos Containing Material
ADE	ADE Consulting Group Pty Ltd
AHD	Australian Height Datum
ASS	Acid Sulfate Soils
BGL	Below Ground Level
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BR	Blind Replicate
BYDA	Before You Dig Australia
CoC	Chain of Custody
CoPC	Contaminants of Potential Concern
CARE	Contamination Assessment and Remediation of the Environment
CSM	Conceptual Site Model
DP	Deposited Plan
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EILs	Ecological Investigation Levels
EPA	NSW Environmental Protection Authority
ESLs	Ecological Screening Levels
HILs	Health Investigation Levels
HSLs	Health Screening Levels
LEP	Local Environmental Plan
m BGL	Meters Below Ground Level
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environmental Protection (Assessment of Site Contamination) Measure
NSW	New South Wales
OCP	Organophosphorus Pesticides
OPP	Organochlorine Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PID	Photo-ionisation Detector
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RAP	Remedial Action Plan
RPD	Relative Percent Difference
SAC	Site Assessment Criteria
SEPP	State Environmental Planning Policy
SH&EWMS	Safety Health and Environmental Works Method Statement
SLS	Sydney Laboratory Services
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
VOC	Volatile Organic Compounds

Executive Summary

ADE Consulting Group Pty Ltd (ADE) was engaged by AT&L ('client') who is acting on behalf of a consortium of multiple stakeholders to undertake a Phase II - Detailed Site Investigation (DSI) within the nature strip situated at the intersection of Abbotts and Mamre Road and along Mamre Road, Kemps Creek, New South Wales (NSW) ('site') (refer to Appendix I – Figures).The site encompasses an approximate 1.19 km long stretch of road and is limited to the nature strip extending laterally five metres from the each side of the road.

The purpose of this investigation is to provide a comprehensive contamination assessment which will act as supporting information to facilitate the proposed development occurring as part of the LOG- East: Abbotts, Aldington, and Mamre Road Upgrade. The primary objective of the investigation is to undertake an intrusive investigation to assess the current contamination status of soil and evaluate any potential risks to human health or the environment.

The site is situated within the road corridor and is currently classified as 'SP2 – Classified Road' as per the Penrith Local Environmental Plan 2010 which is owned and operated by both Transport for NSW and Penrith City Council. The site approximately extends from the property located at 258 Clifton Avenue at the south to 967-981 Mamre Road at the north and includes the intersection situated at Abbotts and Mamre Road, Kemps Creek NSW.

As a component of the desktop study, a preliminary conceptual site model (CSM) was developed to identify potential sources of contamination, including suspected use of historical cut and fill practices, potential hazardous materials including asbestos and coal tar, run-off associated with pesticide/herbicide application, 'fly tipping', timber power poles and high automotive traffic volumes which have the potential to result in emissions and spills/leaks.

Using the preliminary CSM as a basis for the investigation, a systematic soil sampling approach was developed and involved environmental test pits at approximate 30 metre linear intervals across the entire length of the road. A total of 39 sampling locations involving a mixture of visual and full sampling test pits were advanced using both an excavator and hand tools to a maximum depth of 1.9 m below ground level (m BGL).

While conducting the site inspection, it was observed that Mamre Road experiences a medium to high volume of traffic and certain areas along the road shoulder showed signs of being artificially elevated above the natural ground level. The local lithological profile typically comprised of both topsoil and engineered fill (0.0 – 1.8 m BGL) and natural residual clays and highly weathered pockets of Bringelly shale (0.3 – 1.9 m BGL). Specific areas along the road shoulder were noted to contain a high presence foreign material likely attributed to 'fly tipping' and dumping of household general waste products.

A total of 25 primary soils samples were collected across the course of the investigation and were analysed at a NATA accredited laboratory for a wide range of contaminants of potential concern (CoPCs) including heavy metals, total recoverable hydrocarbons (TRHs) / total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs), benzene, toluene, ethyl-benzene, xylene, naphthalene (BTEXN), organochlorine pesticides (OCPs)/organo-phosphate pesticides (OPPs), poly-chlorinated biphenyls (PCBs), per-and poly-fluoroalkyl substances (PFAS) and asbestos.

Based on the findings of the investigation, all samples demonstrated chemical concentrations below the human health screening criteria for a commercial industrial land use context (HIL/HSL D). One exceedance for benzo(a)pyrene was recorded against the adopted site-specific ecological screening criteria and was therefore subject to further statistical evaluation. The 95% upper confidence limit (UCL) subsequently delivered a positive outcome by meeting the statistical requirements and resulting in concentration below the acceptance criteria.

To provide indicative off-site disposal options for the material, a further comparison assessment was made against the NSW EPA Waste Classification Guidelines 2014; 2016 and the ANZECC (2000) and D.A. Berkman Geological Background Ranges (1989). The fill materials encountered across the site typically exhibited chemical concentrations suitable for a chemical classification as 'General Solid Waste', except for recorded exceedances for lead, nickel, and benzo(a)pyrene. After statistical analysis, it was determined that both lead and nickel showed a non-conforming UCL calculation and a dataset that was significantly skewed. As a result, further evaluation was deemed necessary, and the completion of TCLP analysis was recommended.

All five representative natural soil samples returned concentrations below the adopted geological background ranges and therefore was indicatively considered to be complaint as Virgin Excavated Natural Material (VENM). However, it was noted that due to the limited dataset, further sampling would be required to make a complete assessment.

Based on the findings of the investigation, ADE considers the site is suitable for the prescribed land use as commercial/industrial land (HIL/HSL-D) with minor landscaped areas. The site is not considered to warrant the requirement of a remediation action plan (RAP).

Due to the current land-use of the site, ADE recommends that construction sub-management plans i.e., asbestos management plans (AMP) and construction environmental management plan (CEMP) are implemented during the construction phase to manage future unexpected finds.

1 Introduction

1.1 Background and General Information

ADE was engaged by AT&L who is acting on behalf of a consortium of multiple stakeholders to undertake DSI within the nature strip situated at the intersection of Abbotts and Mamre Road and along Mamre Road, Kemps Creek, NSW (refer to *Appendix I – Figures*).The site encompasses an approximate 1.19 km long stretch of road and is limited to the nature strip extending laterally five metres from each side of the road.

The purpose of this investigation is to provide a Phase II Detailed Site Investigation, which will act as supporting information to facilitate the proposed development occurring as part of the LOG- East: Abbotts, Aldington, and Mamre Road Upgrade. The primary objective of the investigation is to undertake an intrusive investigation to assess the current contamination status of soil and evaluate any potential risks to human health or the environment.

The current investigation was undertaken with a systematic soil sampling approach by advancing sampling locations at specified linear intervals across the entire linear length of the road. The area subject to the 'investigation area' or the 'subject area' is defined as the *'nature strip extending laterally five metres from each side of the road down to the depth of natural soils or approximately 1.0 metre below ground level (m BGL)'.*

Based on the proposed development and the intended land-use, a comparison has been made against the human health criteria assigned for commercial/industrial land use (HIL-D / HSL-D), as detailed within the National Environmental Protection Measure (NEPM) (1999), to evaluate the current risk to human health and the environment.

This report has been prepared to assess the suitability of the site for the proposed development.

1.2 Objectives

The specific objectives of the investigation were to:

- Identify past and present potentially contaminating activities.
- Visually assess the current site conditions with regards to potential sources of contamination
- Evaluate and discuss both historical and current site conditions.
- Design and implement a systematic sampling regime for the assessment of soil within the site.
- Assess and describe the source, type, extent, and level of contamination present within the adopted investigation limits of the investigation.
- Determine the potential risk posed to human health and ecological receptors (if present)
- Develop a conceptual site model based on the findings of the previous PSI and current DSI.
- Provide a site contamination assessment and recommendations for further investigation or remediation (if required).

1.3 Scope of Work

Due to the complexity of the investigation, the project was executed within several stages starting with the completion of project preliminaries and a desktop review (Phase 1), undertaking an intrusive fieldwork investigation (Phase 2) and laboratory analysis and reporting (Phase 3). The following provides a breakdown of the scope of work assigned for each prescribed project phase.

1.3.1 Phase I – Project Preliminaries and Desktop Study

- Completion of a comprehensive desktop study which includes a critical review of pre-existing literature, architectural and conceptual design plans, detailed survey plans and Before You Dig Australia (BYDA) plans.

- Acquisition of relevant approvals and permits from governing bodies including the Penrith City Council Road Reserve Opening Permit and a Transport for NSW (TfNSW) Road Occupancy Licence (ROL) for Mamre Road.
- Development of an internal Sampling, Assurance, Quality control Plan (SAQP) for the fieldworks.
- Production of a site-specific Safety Health and Environmental Works Method Statement (SH&WMS).

1.3.2 Phase II – Fieldwork Investigation

- Engagement of a licenced underground service locator to identify and clear the sampling location of underground services and relevant infrastructure.
- Provision of authorised traffic controllers and relevant controls to protect workers, motorists, and pedestrians for the duration of the works.
- Adoption of a systematic sampling design involving the advancement of 40 test pits within a herringbone pattern at select linear intervals.
- Logging of soils in accordance with Unified Soil Classification System (USCS) and observation of visual / olfactory indicators of contamination throughout the soil profile.
- Field screening of soil samples using a calibrated photo-ionisation detector (PID) to assess the potential presence of ionisable volatile organic compounds (VOCs).
- Collection of representative soil samples based on visual and olfactory observations such as lithology, odours and staining.
- Incorporation of standard quality assurance/quality control (QA/QC) protocols.

1.3.3 Phase III - Laboratory Analysis and Reporting

- Analysis of soil samples for identified CoPCs at National Association of Testing Authorities (NATA) accredited laboratories under chain of custody conditions.
- Interpretation of analytical results and field observations in accordance with relevant guidelines and codes of conduct (as outlined in **section 1.4**), and
- Preparation of a Phase II – Detailed Site Investigation report outlining the investigation, interpretation of results, including conclusions and recommendations with reference to the proposed land use.

1.4 Legislative Requirements

The legislative framework for the report is based on guidelines that have been issued and/or endorsed by the NSW EPA under the following Acts/Regulations:

- Contaminated Land Management Act 1997 (NSW) (CLM Act)
- Environmentally Hazardous Chemicals Act 1985 (NSW)
- National Environment Protection (Assessment of Site Contamination) Measure [NEPM], 1999 (as amended 2013) (NEPC, 2013)
- Protection of the Environment Operations Act 1997 (NSW) (POEO Act)
- State Environmental Planning Policy No.55 – Remediation of Land (NSW Government)
- Waste Avoidance and Resource Recovery Act 2001
- Work Health and Safety Act 2011, and
- Work Health and Safety Regulation 2017.

The investigation was carried out in compliance with the following principal acts and regulations, and national and international guidance:

- Friebel & Nadebaum. (2011). Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, Part 1: Technical Development Document, Technical Report No. 10,
- Friebel & Nadebaum. (2011). Health Screening levels for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document, Technical Report No. 10,
- Guidelines for the NSW Site Auditor Scheme (3rd Edition), NSW 2017,

- NSW EPA. (2022). Sampling Design Part 1 – Application (Contaminated Land Guidelines),
- NSW EPA. (2014). Waste Classification Guidelines – Part 1: Classifying Waste (2014) (NSW EPA, 2014),
- NSW EPA. (2015). Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA, 2015),
- NSW EPA. (2020). Guidelines for Consultants Reporting on Contaminated Land (NSW EPA, 2020),
- NSW Safework. (2022). Model Code of Practice: How to Safely Remove Asbestos (NSW Safework, 2022),
- NSW Safework. (2022). Code of Practice: How to Manage and Control Asbestos in the Workplace (NSW Safework, 2022),
- Heads of EPAs Australia and New Zealand [HEPA]. (2020). PFAS National Environmental Management Plan Version 2.0 - January 2020
- Protection of the Environment Operations Act 1997 (NSW) (POEO Act)
- Protection of the Environment Operations (Waste) Regulation 2014
- Western Australian Department of Health (WA DOH). (2021). Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia (WA DOH, 2021).

Australian Standards applied to this investigation:

- Standards Australia. (1998). AS/NZS5667.1-1998 Water Quality-Sampling. Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques, and the Preservation of Handling Samples
- Standards Australia (1999). Australian Standard AS 4482.2 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances, (1999)
- Standards Australia. (2005). Australian Standard AS 4482.1 Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds, (2005)

The following local government plan have also been taken into consideration for preparation of this DSI:

- Penrith Local Environmental Plan 2010 (LEP, 2010).
- Penrith Development Control Plan (DCP, 2014)

2 Site Identification

2.1 Site Location

The site is situated within the road corridor located at the intersection of Abbotts and Mamre Road and along Mamre Road extending north to Lot 38 of Deposited Plan (DP) 258414 and south to Lot 10 of DP 812284. The area is situated within the Local Government Area (LGA) of Penrith City Council and is zoned as 'SP2 – Classified Road', under the Penrith City Council Local Environmental Plan 2010 (refer to *Appendix I – Figures* below for the location of the site).

The subject area or investigation area encompasses an approximate 1.19km length of road and includes the nature strip on each side of the road corridor. The investigation area extends laterally 5 metres from the road kerbside or until the borderline of private property is encountered. As a road reserve and nature strip, the site has been primarily used for public roads and is currently owned and maintained by both Transport for NSW and Penrith City Council.

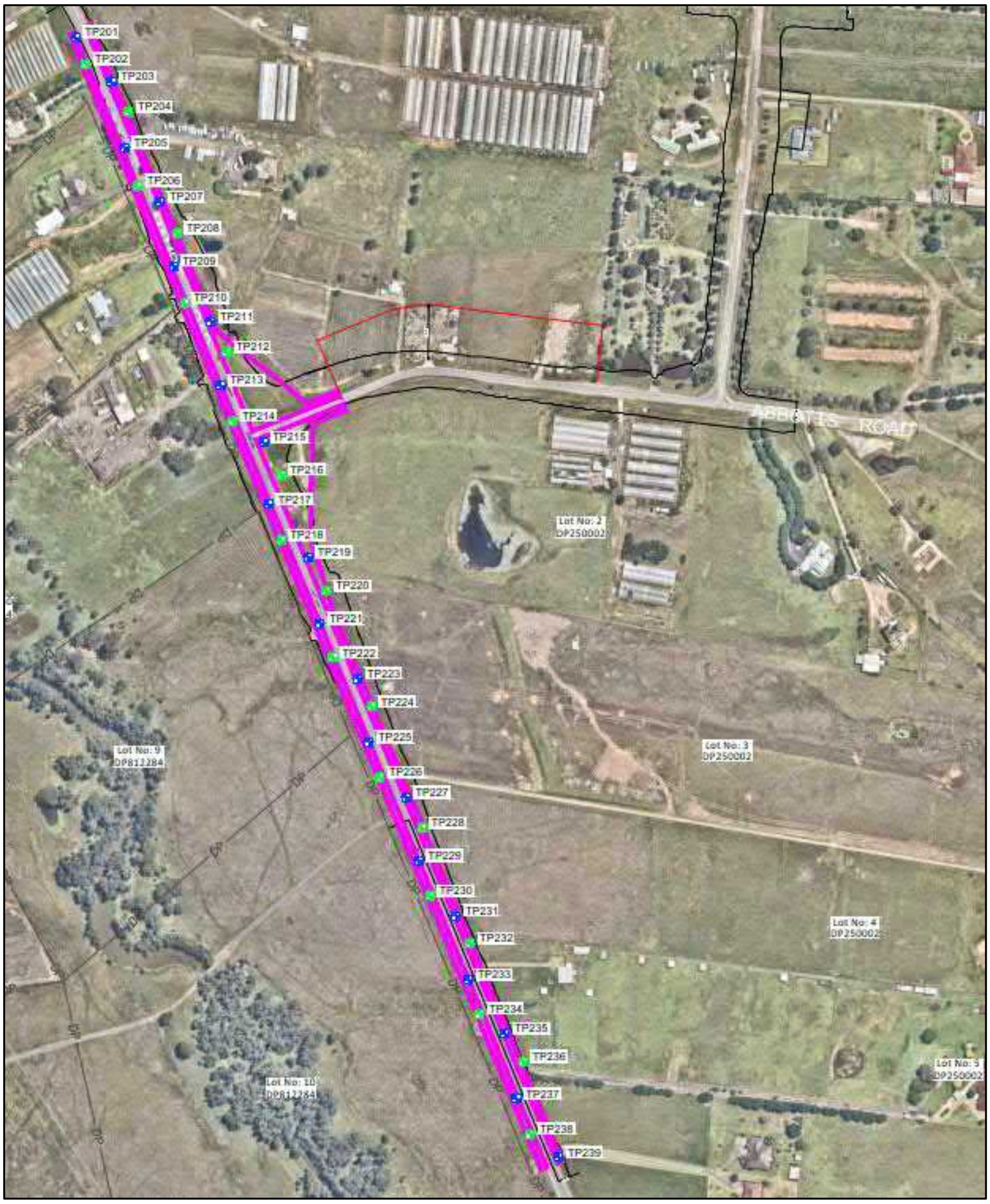


Figure 1. Approximate boundary of the site or investigation area (outlined in pink), accessed from nearmap.com on 10/03/2023.

2.2 Summary of Site Details

Table 1. Summary of Site Details and Information.

Site Details	
Site Address and Title Identification:	**Mamre Road Intersection:** • Opposite 1 Abbotts Road, Kemps Creek – Part of Lot 1 of DP250002 (northern boundary) • Opposite 1016-1028 Mamre Road, Kemps Creek – Part of Lot 2 of DP250002 (southern boundary) **Mamre Road:** • Opposite 967-981, 983 and 1005-1023 Mamre Road, Kemps Creek – Part of Lots 38, 39 and 40 of DP258414 (north-western boundary). • Opposite 269 Aldington Road, Kemps Creek – Part of Lot 8 of DP253503 (north-eastern boundary). • Opposite 1 Abbotts Road, Kemps Creek – Part of Lot 1 of DP250002 (north-eastern boundary). • Opposite 358 and 258 Clifton Avenue, Kemps Creek – Part of Lots 9, 10 of DP812284 (south-eastern boundary) • Opposite 1016-1028 and 1030-1048 Mamre Road, Kemps Creek - Part of Lots 2, 3 of DP250002 (south-eastern boundary).
Local Government Area (LGA)	Penrith City Council
Current Land Use Zoning	SP2 – Classified Road
Site Area	Approximately 1190 m^2
Current Site Owner / Occupier	Transport for NSW and Penrith City Local Council
Former/Current Land Use	Public Road
Trigger for Assessment	Contamination assessment under a Phase II – Detailed Site Investigation to facilitate the proposed development occurring as part of the LOG- East: Abbotts, Aldington, and Mamre Road Upgrade.
Local Environmental Plan	Penrith Local Environmental Plan 2010

3 Site History

3.1 Summary of site history

The Site history has been compiled from information gathered from various sources, including the client, online databases and NSW Government agencies and governing bodies.

The earliest available aerial photograph (1943) indicates that the site was predominantly agricultural/pastoral land with a creek crossing the Site (south near present Lot 10 and 17 of DP253503). A few residential buildings were observed in the south-east of the site and Mamre Road was evident to the west. By 1986, the Abbotts and Aldington Road were observed, with private properties established alongside the road reserves. The primary land use was observed to be predominantly agricultural, and this trend was seen to continue until the present-day site conditions.

Historical commercial and trade records for the site and surrounding areas within the buffer zone, between 1980-2005, included a builder/contractor, dairy business, concrete contractor, and excavation and earthworks contractor. No data was available from 2010 to date. Heritage items listed in the NSW Government public register identified two items within 200 metres of the site, a Farmhouse (Site I.D. I14) and the Gateposts to Colesbrook (Site I.D. I13).

A review of the 'Contaminated Land – Record of Notices' or the 'List of NSW Contaminated Sites Notified to the EPA', listed by the NSW EPA under the Contaminated Land Management Act 1997, does not identify any current notices within a 1,000 m radius of the site. A review of the NSW Government PFAS Investigation Program, identifies one site within the suburb of Kemps Creek (Kemps Creek NSW Rural Fire Service at 245 Devonshire Road, Kemps Creek) as being subject to an NSW EPA PFAS investigation. Overall, the site is considered to be 'low risk' with regards to the potential for PFAS contamination, as the notified site is outside a 250-metre radius and no historical PFAS-related activities have been identified during desktop studies.

For further details regarding site history, geology, topography, hydrology, and hydrogeology, refer to the PSI report (ADE, 2022c), which contains a comprehensive desktop study.

3.2 Previous Environmental Investigations

3.2.1 Detailed Site Investigation – 200 Aldington Road, Kemps Creek, dated 11 February 2022 (ADE 2022a).

ADE (2022a) undertook a Detailed Site Investigation for a site located at 200 Aldington Road, Kemps Creek NSW, which assessed part of lots 20-23 DP255560 and part of Lots 30 – 32 DP258949. The scope of the investigation involved the completion of a Phase I investigation which incorporated a desktop review, field investigation and analytical test work.

A total of 124 test pits were advanced across the investigation area. Of the completed test pits, only one sampling location ('TP92'), was located within/adjacent to the current investigation area. Two primary fill samples and one natural sample were collected from the sampling location were collected and analysed for a wide range of CoPCs, including heavy metals, PAHs, BTEX, PAHs, TRHs, OCPs/OPPs, VOCs/Phenols and Asbestos (NEPC, 2013; WA DOH, 2021). In-field PID readings were taken for all samples.

The lab results obtained from 'TP92', showed that all analytes were below the human health and ecological screening criteria assigned for a commercial and industrial land use context (HIL/HSL-D) (NEPC, 2013). The investigation recommended that further sampling is undertaken within the area to characterise and understand the contamination status of the site.

3.2.2 Detailed Site Investigation – 74 – 90 Aldington Road, Kemps Creek NSW, dated 30 March 2022 (ADE 2022b)

ADE (2022b) completed a Phase II - Detailed Site Investigation for the properties located at 74 – 90 Aldington Road, Kemps Creek NSW, or Part of lots 41 and 42 of DP708347. The assessment included Phase I desktop review, field investigation and analytical test work. A total of 83 samples were collected from across 55 primary test pit locations advanced across the area. Upon review, only two test pit locations ('TP1' and 'TP43'), were observed within/adjacent to the current investigation area. One fill sample and one natural sample were collected at each test pit. **Table 2** presents a summary of the samples collected and analysed as part of the investigation.

Table 2. Summary of samples collected and lab analysis.

Test Pit Location	Sample ID	Depth (m BGL)	Sample type	Analytes
TP1	TP1(fill)0.0-0.2	0.0-0.2	Fill	Standard suite, PFAS-short suite, VOCs/sVOCs and phenols, salinity, NEPM asbestos quantification analysis, CEC/clay content and PID field screening
	TP1(natural)0.2-0.4	0.2-0.4	Natural	8 Heavy metals, TRH, BTEX, PAHs, PID field screening
TP43	21.1994.TP43-fill 0-1.0	0.0-1.0	Fill	Standard suite, PID field screening
	21.1994.tp43-natural 1-1.7	1.0-1.7	Natural	8 Heavy metals, TRH, BTEX, PAHs, PID field screening

The analytical results obtained from the above samples all retuned concentrations below the human health and ecological screening criteria assigned for a commercial and industrial land use context (HIL/HSL-D) (NEPC, 2013). All field PID readings returned negligible concentration and no visual/olfactory indications of potential contamination was noted. The investigation later recommended that further sampling is undertaken within the area to further characterise and understand the contamination status of the site.

3.2.3 Preliminary Site Investigation – Abbotts Road and Aldington Road upgrade, Kemps Creek NSW, ref: 21.1725.07 PSI.v1f, dated 01 November 2022 (ADE, 2022c)

ADE Consulting Group Pty Ltd (ADE) was engaged by AT&L to undertake a Stage I Preliminary Site Investigation (PSI) within the current investigation area to assess the potential for contamination at the site. The purpose of the investigation was to identify past and present potentially contaminating activities occurring at the site, to identify the presence of any contaminants of potential concern (CoPCs) during the desktop study and site walk-over, to determine the need for further investigations based on a preliminary assessment of the site's contamination.

The scope of work for the investigation broadly involved the following:

- Appraisal of the Site's history;
- Review of previous environmental investigation reports within the Site;
- Desktop study of the Site's condition and its surrounding environment;
- A Site walk-over inspection; and
- Preparation of a PSI report outlining the results of these investigations.

The PSI identified several potential contaminant sources, including:

- Unknown fill used across the proposal footprint before roads being established
- Vehicle use on existing roads.
- Agricultural use of land adjacent to the route
- Contamination leaching from asphalt road

- Automotive fluid leaks during road operation
- Stockpiled construction & demolition waste, household waste/illegal dumping, and waste asphalt at road shoulders; and
- Timber power poles in-use/discarded.

Based on the results of the desktop study and site walk-over investigation, ADE considered there was a low to moderate potential for contamination to have occurred on-site as a result of the past and present land uses. ADE considered that the site can likely be determined or made suitable for future planning activities, pending a Stage II DSI and remediation (if required).

3.3 Site Inspection Details

Experienced environmental consultants representing ADE, undertook a site inspection on Thursday, 27 March 2023 and Friday, 28 March 2023, to complete service locating, a visual assessment of the site and provide information on potential contamination issues, including the following:

- Surrounding land uses and potential contamination sources.
- Presence of any hazardous or dangerous goods storage.
- Presence of any USTs or ASTs and/or associated fuel transfer systems i.e., fuel lines.
- Condition of current structures, vegetation, and soil.
- Visible and/or olfactory evidence of contamination.
- Presence of any industrial/commercial activities.
- Evidence of former spill incidents/accidents.
- Current ground conditions, vegetation type and cover, topography, elevation, direction of surface run-off and evidence of potential drainage lines.
- Evidence of soil loss/deposition/erosion, stockpiled materials, and potentially contaminating infrastructure i.e., electrical substations.
- Proximity to sensitive environmental areas/features/habitats including water bodies/courses.
- Evidence of naturally occurring contaminants.
- Assessment of the current site condition with its history.

3.4 Surrounding Land Uses

Based on a desktop search of the site and visual observations made during the site inspection, the surrounding land uses of the site are as follows:

- **North:** Immediately north of the Site, Mamre Road continues on and is classed as SP2 Infrastructure Classified Road under the State Environmental Planning Policy. In addition, the surrounding northern extremities of the site are classed as General Industrial lands, however, site observations indicate they are currently being utilised as a mixture of low density residential and agricultural purposes.
- **East:** East of the site, lies low density residential properties which run alongside the entire eastern boundary length of the site. Beyond these low-density residential properties lies unused Public recreational space.
- **West:** A mixture of low density residential and minimal commercial/ industrial properties undertaking agricultural practices, were observed, west of the Site.
- **South:** Low density residential premises were observed immediately south of the site. Further south, Commercial/ Industrial properties were identified.

3.5 Local Geology and Topography

With reference to the 1:100,000 scale Penrith Soil Landscape Series Sheet 9030 map, the site is situated within the Blacktown (bt) soil landscape group comprising gently undulating rises on Wianamatta Group Shales, broad rounded crests, and ridges with gently inclined slopes.

Approx. 50-100m to the east of the site lies Kemps Creek and the south creek (sc) soil landscape group comprising floodplains, valley flats and drainage depressions of channels on the Cumberland Plain. Usually flat with incised channels and mainly cleared.

The specific depths of dominant soil materials are characterised by their location in relation to the local topography but generally consist of the following;

- **sc1—Brown apedal single-grained loam**. This is a brown sandy loam to sandy clay loam with generally apedal single-grained structure and porous earthy fabric. It commonly occurs as topsoil (A horizon). Colours range from dull reddish brown (5YR 4/3) to dull yellowish brown (10YR 4/3). This material is usually moderately acid (pH 5.5) but varies from strongly acid (pH 4.5) to slightly acid (pH 6.5). Small (2–6 mm) angular or rounded gravels may occur. Roots are abundant in surface layers, charcoal and other inclusions do not occur.
- **sc2—Dull brown clay loam.** This is a hard setting dull brown clay loam to fine sandy clay loam, usually with apedal massive structure and porous earthy fabric. It occurs as topsoil (A horizon). Occasionally, weak structure occurs with small (2–5mm) rough-faced subangular blocky peds. Colour is usually dull brown (7.5YR 5/4) but has a range from greyish brown (5YR 4/2) to yellowish brown (10YR 5/6). pH varies from moderately acid (pH 5.5) to neutral (pH 7.0). Stones and other inclusions do not occur, and roots are rarely found.
- **sc3—Bright brown clay.** This is a bright brown light to medium clay with strongly pedal structure and dense smooth-faced ped fabric. This material usually occurs as subsoil (B horizon). Occasionally this material contains sufficient fine sand to reach the texture grade of sandy clay. Peds are smooth-faced angular blocky or polyhedral and 20–50 mm in size. This material is generally whole-coloured ranging from reddish brown (5YR 4/8) to bright yellowish brown (10YR 5/1). Mottles, when they do occur, are yellow or grey and occupy up to 15% of the volume 102 of the material. pH is highly variable, ranging from extremely acid (pH 3.0) to neutral (pH 7.0). Roots are only present where this material occurs as topsoil. There is no charcoal but small (2–20 mm) subrounded or subangular gravels may make up to 50% of the volume.

3.6 Hydrogeology and hydrology

Most of the site is not sealed, with exposed soils and landscaping areas within the residential premises on the eastern and western boundaries of the site. In these areas, surface water is presumed to infiltrate into the sub-soil profile. Groundwater is expected to emulate the site topography and proceed relatively slowly (due to the low hydraulic gradient characteristic of the underlying clays) in an easterly direction towards Parramatta River.

3.7 Naturally occurring contaminants

A review of the acid sulfate soil (ASS) risk mapping located at NSW Department of Planning, Industry and Environment 2021 online portal Espadev2.2 (environmental.nsw.gov.ay/eSpade2WebApp), was undertaken to establish the potential for ASS at the source site. The site was identified as ‘ No known occurrence’ regarding ASS risk . The Site is however, situated within an area which is classified as having a ‘moderate hazard or risk’ for dryland salinity to occur for years up to and including 2050 as per the National Assessment for Dryland Salinity.

3.8 Current Site Condition / Site Observations

A summary of observations made during the fieldworks undertaken by ADE are provided in **Table 3** and highlighted in *Appendix I – Figures* and *Appendix II – Photographs.*

Table 3. Key Site Observations.

Item	Key Observations
Site Use	The site is currently being utilised as a public road.
Existing Buildings / Structures	Existing structures such as residential driveways and fence lines were identified within the site. In addition, on the southeastern extremity of the site a swale was present within the proposed site footprint.
Sumps/Drains	No surface water drains, or artificial drainage lines were identified within the site, however, due to the slope of the site on both the western and eastern sides, swales were present, serving to prevent excessive surface water flow on Mamre Road. In addition, a culvert was present at the corner of Abbotts and Mamre Road, serving to re-direct surface water run-off away from Mamre Road.
Presence of stockpiled materials	No stockpiles were observed on-site.
Industrial Liquid Waste Disposal	No industrial liquid waste disposal facilities were observed on-site.
Domestic Waste Disposal	No domestic waste bins were observed at the site, however general plastic, glass, waste tyres and aluminum litter were observed on the ground surface.
Existing Services	The site primarily has underground and above ground services such as low/high voltage electrical, water and gas.
Vegetation Type, Cover and Condition	Low-bearing vegetation was noted to be densely distributed throughout the site. No signs of vegetative stress were noted during the investigation.
Hazardous Building Materials	No hazardous building materials were observed on-site.
Fuel Storage Tanks (USTs/ASTs)	No above-ground or underground fuel storage tanks were observed
Surrounding Areas	Surrounding areas are predominantly used for residential and commercial land purposes.

4 Preliminary conceptual site model

Schedule B1 of the NEPM (*NEPC, 2013*) identifies a conceptual site model (CSM) as a representation of information regarding contamination sources, exposure pathways and the potential receptors. The essential elements of a CSM include:

- Known (and potential) contamination sources and contaminants of concern.
- Impacted media (e.g., soil, groundwater, surface water, soil vapour etc.).
- Human/ecological receptors.
- Potential/complete exposure pathways.

4.1 Potential contamination sources

The following potential contamination sources were identified during the desktop study review of the site and within the Phase I – Preliminary Site Investigation (ADE, 2022c)

- Historical un-controlled fill practices associated with road shoulder construction.
- Presence of suspected hazardous materials including asbestos and coal tar.
- Regular automotive vehicular activity such as emissions and fluid/fuel leaks.
- Run-off associated with pesticide/herbicide applications from agricultural land.
- 'Fly-tipping' of household waste.
- Timber power poles.
- Presence of unknown stockpiled soil and waste materials e.g., construction/demolition waste, tyres, oil drums.

4.2 Contaminants of potential concern

Based on the potential contamination sources outlined above, the following CoPCs were identified:

- Heavy metals.
- Total recoverable hydrocarbons (TRHs)/total petroleum hydrocarbons (TPHs).
- Polycyclic aromatic hydrocarbons (PAHs).
- Organochloride pesticides (OCPs).
- Organophosphate pesticides (OPPs).
- Poly-chlorinated bi-phenyls (PCBs).
- Semi- and volatile organic compounds (SVOCs/VOCs).
- Per-fluoroalkyl substances (PFAS).
- Phenolic Compounds.
- Coal Tar.
- Asbestos.

4.3 Primary transport mechanisms

The primary transport mechanisms for the migration of potential contaminants onto the site from adjacent areas, within the site or from the site to adjacent areas include:

- Dispersion airborne particulates due to wind following disturbance.
- Air dispersion of dust and volatile organic compounds.
- Downward migration and leaching of contaminants through soil.
- Lateral migration via surface water run-off.
- Lateral migration via groundwater towards nearby surface water discharge zones.
- Transport of contaminants by human and/or mechanical disturbance.
- Physical contact/ingestion/inhalation with contaminated media.
- Biomagnification along food chains.

4.4 Potential contamination receptors

The primary potential contamination receptors are considered to include:

- Future users of the site (e.g., motorists, nearby residents, and construction/maintenance workers).
- Future maintenance workers involved in sub-surface excavations.
- Future construction workers during redevelopment of the site.
- Vegetation introduced as part of the development.

4.5 Exposure pathways

4.5.1 Human health – direct contact and ingestion

Soil materials may be exposed during construction works or as a result of intrusive activities such as bulk earthwork activities across the site. It was therefore considered appropriate to assess whether a source of potential exposure from a contaminant of potential concern via the direct contact and/or ingestion pathway exists for current/future site users, site workers, motorists, and adjacent properties.

4.5.2 Human health – inhalation /vapour intrusion

Confirmed and/or suspected hazardous materials such as asbestos within select areas and high automotive traffic levels have been noted within the investigation area. Therefore, it was considered appropriate to assess whether a source of potential exposure from a contaminant of concern via both inhalation and the vapour intrusion pathway exists for current/future site users, motorists, and particularly construction and maintenance contractors.

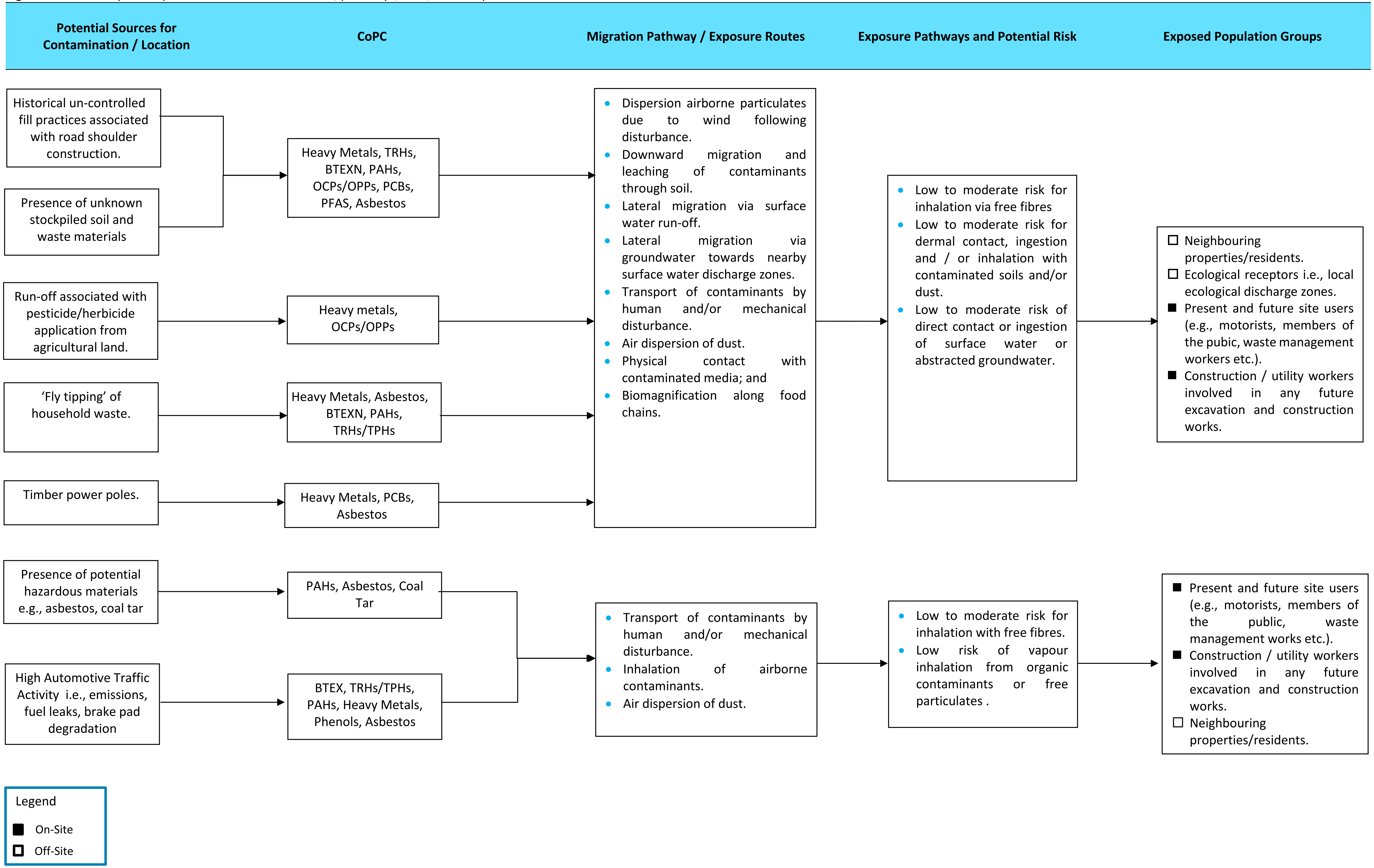
4.5.3 Human/ecological health - Groundwater discharge and surface water run-off

Due to the current design of the investigation area which includes a mixture of landscaped areas and hardstand surfaces, a moderate to high level of surface water run-off and surface water infiltration is expected which may subsequently discharge into local ecological communities. Therefore, ADE considers it necessary to examine the potential ecological risk associated with the site's local groundwater system and surface water run-off potential.

4.6 Preliminary Conceptual Site Contamination Model

The preliminary CSM depicted in **Figure 2.** shows the potential contamination sources, their exposure pathways, and receptors.

Figure 2. Preliminary CSM - potential contaminant sources, pathways, risks, and receptors



5 Sampling Plan, Methodology, and Investigation Pattern

5.1 Pre-work Procedure and Site Establishment

Before mobilisation to site, a job-specific SH&EWMS and relevant excavation permit documentation was developed and presented in a pre-start meeting before the commencement of works and signed on to by ADE staff and contractors. In accordance with Transport for NSW and Penrith City requirements, a road occupancy licence (ROL) and Road Opening Excavation Permit was obtained from relevant governing bodies prior to the commencement of intrusive activities.

Following pre-start and pre-work activities, the work area was established by incorporating the necessary traffic control protection measures to protect motorists, members of the public and workers. All traffic control measures were controlled by a licenced traffic controllers and installed as per a site-specific traffic guidance scheme (TGS).

Once the site was established, an experienced environmental consultant undertook a detailed site walkover to identify potential sources of contamination or areas of notable concern. Upon completion, the proposed test pit locations were marked out across the site based on accessibility and observations noted during the walkover. Before the commencement of intrusive activities, each proposed test pit location was 'cleared' for underground services by a qualified service locator via cable avoidance tool and ground-penetrating radar (GPR).

5.2 Sampling Design Plan Strategy and Rationale

The site investigation and soil sampling procedures were developed in consultation with the NSW EPA Sampling Design Part 1- Application (Contaminated Land Guidelines) (NSW EPA, 2022). A systematic regime was designed to collect representative samples within a herringbone pattern at approximate 30 metre linear intervals. A total of 39 sampling locations were advanced across the investigation area. Of the test pits completed, 20 sampling locations underwent a chemical and asbestos assessment and 19 sampling locations consisted of a visual assessment only.

During the investigation, one visual sampling location could not be completed due to recent wet weather conditions. These conditions interfered with the legibility of the underground service markings, which subsequently resulted in the termination of the sampling location for safety reasons.

5.3 Fieldwork Methodology

On 27 and 28 March 2023, a total of 39 test pit locations were completed across the site using an excavator and by hand (i.e., shovel and hand-auger) to a maximum depth of 1.9 m BGL, depending on site accessibility and safety constraints. In situations where an excavator could not fit along the road reserve with sufficient safety clearance for traffic, test pits were advanced via hand tools (refer to **Table 4** for more information).

A total of 20 primary soil samples were collected across the course of the investigation (excluding QA/QC samples). All samples were submitted to NATA accredited laboratories for analyses as per the recommended holding times on a standard (5-day) turnaround time (refer to **Table 17** for the adopted sampling and analytical program).

5.3.1 Soil sampling methodology

Table 4 outlines soil sampling investigation and methodology adopted during the course of the investigation.

Table 4. Summary of soil sampling investigation and methodology.

Activity	Detail/Comments
Underground service clearance	Before the commencement of any intrusive activities, appropriate consultation with a client representative was performed as part of due diligence practices which included a review of DBYD plans and detailed underground survey plans provided to ADE by the client.
Environmental test pits	Environmental test pits were completed with the assistance of an excavator or via hand tools (i.e., shovel or hand auger), depending on site accessibility and safety concerns. Samples were typically collected at the soil surface followed by every metre thereafter until the target depth was reached or upon encountering a new lithological stratum. Soil samples collected with an excavator were collected directly from the centre of the excavator bucket using disposable nitrile gloves to minimise the potential for cross-contamination. When using hand tools, fresh samples were collected from the base of the completed test pit using disposable nitrile gloves to minimise the potential for cross-contamination between sampling points. Upon the completion of each test pit, excess excavated soil materials were re-instated into the test pit and the ground conditions returned to their original condition and/or appropriately compacted. Test pitting was only undertaken where the site conditions permitted. Hand tools and other non-disposable tools were decontaminated using laboratory provided deionised water between each sampling point.
PFAS Sampling Methodology	Samples collected for PFAS analysis were collected using disposable nitrile gloves either directly from the centre of the excavator bucket or from a fresh soil sample. Samples were typically collected by scoping the soil materials directly into a laboratory prepared high-density polyethylene (HDPE) jar and sealed with an HDPE lid. Samples were stored in a cool, dry place and away from exposure to sunlight.
Asbestos quantification methodology	Asbestos quantification sampling was completed as per the NEPM (NEPC, 2013) and as outlined within the Western Australian Department of Health (WA DoH) Guidelines from the Assessment and Management of Asbestos Contaminated Sites in Western Australia (WA DoH, 2021). In summary, 10L of soil materials were collected, weighed, and screened for the presence/absence of bonded asbestos using a 7mm x 7mm sieve or manually sieved over a colour-contrasting plastic sheet. If bonded asbestos fragments were identified/suspected during the screening process, they were collected and analysed to determine the percentage weight-by-weight concentration (% w/w) of asbestos for each sample. Fresh 500 mL soil samples were then collected within medium zip lock bags and sent for analysis of asbestos fines (AF) and fibrous asbestos (FA). Test pitting was only undertaken where the site conditions permitted.
Sample collection and transportation	All samples were placed in laboratory prepared, suitable analyte containers involving sterile glass jars lined with Teflon lids for chemical analysis (excluding PFAS samples) and small zip lock bags for asbestos analysis. Each sample collected for chemical analysis was placed within a pre-chilled esky or cooler box with ice packs or equivalent to maintain samples at approximately 4^{0}C. Asbestos samples were stored in a large resin bag for storage. The original chain of custody (CoC) form was enclosed with the samples and dispatched to NATA accredited analytical laboratories.
Soil headspace screening	Following the collection of each sample, a PID with a 10.6 eV lamp, pre-calibrated with isobutylene gas at 100 ppm was used to screen the headspace gases of the collected samples to assess for the presence of VOCs. The PID headspace screening was conducted using a resealable zip-lock plastic bag, and the soil sample was agitated as the PID reading was taken inside the zip-lock plastic bag (the bag was appropriately sealed when inserting the PID).
Equipment decontamination	Dedicated disposable materials (e.g., nitrile gloves, HDPE tubing) were changed between each sampling point. All disposable sampling equipment/materials were collected and removed before leaving the site. All non-disposable sampling equipment was decontaminated by a three-stage decontamination process which included rinsing the piece of equipment with PFAS free denoised water, followed by a rinse of a PFAS free detergent (Liquinox) and a final rinse using laboratory provided PFAS free deionised water.

5.4 Documentation

A field observation log was kept by sampling personnel during all phases of soil and groundwater sampling. Details recorded in the log included:

- Test pit number
- Soil profile notes
- Sampling method
- Sample identification
- Sample description, and
- Sample point measurements.

A comprehensive master sample register was maintained. As samples were received, they were given a unique sequential number from the sample register into which details from the labels were entered. Before packing and dispatch of samples for analysis, a CoC form was completed (refer to *Appendix VII – Analytical Reports and Chain of Custody Documentation*). This form recorded details of the individual samples being dispatched and the type of analysis required for each sample.

5.5 Laboratory Submission

The following outlines the NATA accredited laboratories used for analytical testing:

- Sydney Laboratory Services (SLS), Silverwater NSW – NATA Accreditation No. 14664
- Envirolab, Chatswood NSW – NATA Accreditation No. 2901

6 Site Assessment Criteria

6.1 Soil Assessment Criteria

The soil assessment criteria specified in the following publications were employed for this DSI:

- Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, Environmental Soil Quality Guidelines Background Ranges (ANZECC, 1992)
- Assessment of Site Contamination, National Environment Protection (Assessment of Site Contamination) Measure [NEPM], 2013 (NEPC, 2013)
- D.A Berkman. (1989) Field Geologist's Manual (D.A. Berkman, 1989)
- HEPA. (2020). The PFAS National Environmental Management Plan V2.0 (NEMP, 2020)
- New South Wales Environmental Protection Authority [NSW EPA]. (2014). Waste Classification Guidelines – Part 1: Classifying Waste (NSW EPA, 2014).

This report applies the relevant investigation levels to identify contaminants and/or areas of contamination that potentially pose a risk to human or environmental health.

6.1.1 Health Investigation Levels (HILs)

The NEPM (2013) guidelines describe four broad land-use settings to assess potential human health risks for a broad range of metals and organic substances. These four HIL categories are used to assess human health risk via all relevant pathways of exposure for the following broad land use categories:

- HIL-A – Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, no poultry, also includes children's day-care centres, preschools, and primary schools)
- HIL-B – Residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats.
- HIL-C – Public open space such as parks, playgrounds, playing fields (e.g., ovals), secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves), which should be subject to a Site-specific assessment where appropriate, and
- HIL-D – Commercial/industrial such as shops, offices, factories, and industrial sites.

Based on the available information, which includes the current land use as a public road which includes minor landscaping areas, the health investigation levels assigned for commercial/industrial land (HIL-D) has been adopted for screening purposes. A summary of the applicable HILs for soil is presented within **Table 5.**

Table 5. Summary of HILs-D in soil, adapted from Table 1A (1), Schedule B1 of NEPM (2013).

Analyte	HIL D - Commercial/Industrial (mg/kg)
Arsenic (total)	3,000
Cadmium	900
Chromium (Total)	3,600
Copper	240,000
Lead	1,500
Mercury (inorganic)	730
Nickel	6,000
Zinc	400,000
Carcinogenic PAHs (as BaP TEQ[1])	40
Total PAHs	4,000
Total PCBs	7
DDT+DDE+DDD	3,600
Aldrin and Dieldrin	45

Analyte	HIL D - Commercial/Industrial (mg/kg)
Chlordane	530
Endosulfan	2,000
Endrin	100
Heptachlor	50
Hexachlorobenzene	80
Methoxychlor	2,500
Chlorpyrifos	2,000
Cyanide (free)	1500
Phenols	240,000

Notes to Table 5
1 – Toxicity equivalent quotient

6.1.2 Health Screening Levels (HSLs)

Health screening levels (HSLs) have been developed for selected petroleum compounds and fractions and apply to human health risk assessment via inhalation and direct contact pathways. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. NEPC (2013) presents Tier 1 screening criteria for BTEX, naphthalene, TRH fractions C6-C10 and C10-C16 for vapour intrusion.

As there are potential pathways of exposure concerning direct contact and ingestion for both construction workers and future users of the site, further tier 1 HSL screening criteria as per Friebel and Nadebaum's 'Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, Part 2: Application Document, Technical report No. 10' (2011) has been adopted to include vapour risk to intrusive maintenance workers (Shallow Trench 0.0 to <1.0 m) and HSL levels for direct human contact outlined in **Table 6.**

Table 6. Site assessment criteria – HSLs for soil contamination.

Analyte	Health Screening Levels (HSLs)	
	Soil HSLs for Vapour Intrusion - HSL D (mg/kg) (0m to <1m)	Soil HSLs for Direct Contact - HSL D (mg/kg)[1]
Benzene	3	430
Toluene	-	99,000
Ethylbenzene	-	27,000
Xylene	230	81,000
Carcinogenic PAHs (as B[a]P TEQ)[2]	3	-
Naphthalene	-	11,000
TRH: C6 – C10(F1)[3]	260	26,000
TRH: C10 – C16 (F2)	-	20,000
TRH: C16 – C34(F3)	-	27,000
TRH: C34 – C40(F4)	-	38,000

Notes to Table 6
1- Human exposure settings based on intended land use have been established for HILs/HSLs (see Taylor and Langley 1998). HIL D – Commercial/Industrial such as shops, offices, factories and industrial sites, was the land use setting adopted for this investigation.
2- Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their Toxic Equivalency Factor (TEFs) (potency relative to B[a]P).

6.1.3 Ecological investigation levels and Ecological Screening Levels (EILs/ESLs)

The current land use features minor landscaped areas with open access to soil. To assess the impact on ecosystems, including site vegetation from contamination within the upper two metres of the subsurface environment, Schedule B1 of NEPM (*NEPC, 2013*) presents EILs and ESLs for different land uses. ESLs have been developed for TRH, BTEX and benzo(a)pyrene in soils and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. The ecological assessment criteria for a commercial/industrial land use context (mg/kg) are the adopted land use criteria for this investigation.

The methodology outlined in Schedule B1 NEPM (*NEPC, 2013*) was developed to protect soil processes, soil biota (flora and fauna), terrestrial invertebrates and vertebrates. Derivation of site specific EILs for metals (Cr, Cu, Ni & Zn) involves first establishing the appropriate added contaminant limit (ACL) values from Table 1B (1) – 1B (3) of Schedule B1 of the NEPM (*NEPC, 2013*). The tables consider the land use purposes and soil-specific properties such as pH and CEC to determine the CoPCs recommended ACL. Please note that the generic ACL for lead (Pb) is taken directly from Table 1(B)4 of Schedule B1 of the NEPM (*NEPC, 2013*). The ACL values are then added to the contaminant's respective ambient background concentration (ABC), determined via suitable reference data or baseline investigations, to produce the site-specific EIL (EIL = ABC + ACL).

No ABC data was available for the site. Therefore, for this investigation ADE has calculated the relevant ACL values and conservatively adopted them as the EIL. Additionally, the EIL criteria presented for arsenic (As), naphthalene and DDT are generic EIL values irrespective of their physiochemical properties sourced from Table 1(B)5 of Schedule B1 of the NEPM (*NEPC, 2013*).

Based on data obtained from a previous environmental assessment within the investigation area (ADE, 2022d), the site-specific soil properties used to calculate the EILs are shown in **Table 7.** ADE calculated the average of the values as an estimation of the true population mean and adopted these values in the derivation of the site-specific EILs. The calculated EIL is shown in **Table 8.** Please note that no clay content (%) data was obtained for the derivation of Cu and Zn ACL and therefore, the most conservative modelled clay content (%) was adopted.

Table 7. Soil Properties and calculation of EIL criteria.

Investigation No.	Sample ID	pH	Clay Content (%)	CEC (meq/100g)
	BH03(1.0-1.1)	5.9	25	9.5
ADE, 2022d	BH17(0.4-0.5)	5.1	25	8.7
	BH24(0.4-0.5)	8.5	25	9.7
	Average	**6.5**	**25[1]**	**9.3**

Notes to Table 7

1 - In the absence of site-specific soil clay content data, the most conservative modelled soil clay content for the site has been selected as sourced from the NSW Office of Environmental Heritage (eSpade).

2- Aged ACLs derived assuming a high traffic volume.

3 - For the derivation of copper ACLs a low organic content (1%) is assumed due to the physiochemical nature of the local lithology i.e., natural clays

Table 8. Site-specific EIL criteria.

Analyte	Commercial/Industrial Land Use (mg/kg)
Cr[2]	910
Cu[3]	290
Ni[5]	250
Zn[6]	710
As[1]	160
Pb[4]	1800
Naphthalene[1]	370

Analyte	Commercial/Industrial Land Use (mg/kg)
DDT[1]	640

Notes to Table 8

1- Generic EIL, as per Table 1B (5) of Schedule B1 of NEPM (2013).
2- Cu ACL calculated using CEC data and adopted as EIL, as per Table 1B (2) of Schedule B1 of NEPM (2013).
3- Generic ACL for Pb conservatively adopted as EIL, as per Table 1B (4) of Schedule B1 of NEPM (2013).
4- Ni ACL calculated using CEC data and adopted as EIL, as per Table 1B (3) of Schedule B1 of NEPM (2013).
5- Zn ACL calculated using a conservative modelled pH and CEC data and adopted as EIL, as per Table 1B (1) of Schedule B1 of NEPM (2013).
6- Aged ACLs derived assuming a high traffic volume.

ESLs have been developed for TRH, BTEX and benzo(a)pyrene in soils and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. **Table 9** provides a summary of the adopted ESLs.

Table 9. Summary of ESLs in soil

Chemical	ESL – Commercial /Industrial Land Use (coarse grained soils) (mg/kg)
F1 C_6-C_{10}	215
F2 C_{10}-C_{16}	170
F3 >C_{16}-C_{34}	1700
F4 >C_{34}-C_{40}	3300
Benzene	75
Toluene	135
Ethylbenzene	165
Xylenes	180
Benzo(a)pyrene	0.7

Notes to Table 9

1- Values for fine-grained soil texture adopted for conservative purposes.
2- Generic ESLs for TPH fractions, F1-F4, BTEX and benzo(a)pyrene.

6.1.4 Management Limits

In accordance with Section 2.9 of Schedule B1 of the ASC NEPM, consideration of management limits for petroleum hydrocarbons will be undertaken to assess whether the reported soil conditions have the potential to pose a risk to buried infrastructure, or the formation of non-aqueous phase liquid (NAPL). Values for coarse grained soils are adopted as a conservative approach.

A summary of the adopted TRH management limits for this site is provided in **Table 10.**

Table 10. Summary of adopted TRH management limits

Chemical	Management Limits for TRH (mg/kg)
F1 C_6-C_{10}	700
F2 C_{10}-C_{16}	1,000
F3 >C_{16}-C_{34}	3,500
F4 >C_{34}-C_{40}	10,000

6.1.5 Asbestos in Soil

The HSL-C and HSL-D criteria outlined within the NEPM (NEPC,2013), based on the guidance provided in the WA DoH Guidelines (WA DoH, 2021), were adopted to assess the presence of asbestos in soil. These are shown in **Table 11.**

The guidelines specify that the surface should be free of visible asbestos (refer to % w/w asbestos in soil = % asbestos content x bonded ACM (g)
10L soil weight (g)
Table 11).The concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013):

$$\% \text{ w/w asbestos in soil} = \frac{\% \text{ asbestos content x bonded ACM (kg)}}{\text{Soil volume (L) x soil density (kg/L)}}$$

Each bucket sample was weighed using electronic scales, and the above equation was adjusted as follows (we note that the units have also been converted to grams):

$$\% \text{ w/w asbestos in soil} = \frac{\% \text{ asbestos content x bonded ACM (g)}}{\text{10L soil weight (g)}}$$

Table 11. Summary of adopted HSLs for asbestos in soil.

Asbestos Form	Health Screening Level (w/w)
	HSL D
Non-friable Asbestos	0.05 %
FA and AF	0.001%
All forms of asbestos	No visible asbestos on the soil surface

6.1.6 PFAS in soil

The HEPA *PFAS National Environmental Management Plan Version 2.0 (2020)* provides guidance on the management of PFAS impacted soils. The classes of soil criteria defined in the PFAS NEMP National Environmental Management Plan 2.0 (2020) for human HILs and EILs are presented in
Table 12.

Table 12. Summary of the adopted assessment criteria for PFAS in soil.

Soil Criteria (Human Health)	PFOS + PFHxS (mg/kg)	PFOA (mg/kg)
Commercial/Industrial (HIL-D)	20	50
Soil Criteria (Ecological)	**PFOS (mg/kg)**	**PFOA (mg/kg)**
Ecological direct exposure	1	10
Ecological indirect exposure in areas of low accessible soil	0.14	NA

6.1.7 Aesthetics

NEPM 2013 requires that the aesthetic quality of accessible soils be considered even if analytical testing demonstrates that concentrations of COPCs are within the Site assessment criteria (SAC). It should be noted that there are no quantifiable guidelines in determining if soils are appropriately aesthetic. However, the NEPM 2013 does indicate that professional judgement concerning the quantity, type and distribution of foreign materials and odours concerning the specific land use should be employed.

The following scenarios (including but not limited to the following) would trigger further aesthetic assessment:

- Hydrocarbon sheen on surface water
- Anthropogenic soil staining.
- Odorous soils, i.e., petroleum hydrocarbon odours or hydrogen sulfide in soil.

6.2 Statistical Treatment

Analytical results from the soil sampling program are statistically analysed to determine their applicability to the assessment and recommendation of remedial actions in the event of site assessment criteria (SAC) exceedances.

A contaminant concentration in soil will be deemed a non-exceedance if:

- The maximum concentration of all samples meets the specified acceptance criteria; or
- The 95% Upper Control Limit (UCL) is below the acceptance criteria with the following criteria:
  - The standard deviation of the results should be less than 50% of the relevant investigation or screening level; and
  - No individual exceedance should exceed 250% of the relevant investigation or screening level.

If the 95% UCL of the arithmetic mean of a contaminant concentration is above the acceptance criteria, then the soil will be classified as contaminated and will require further assessment, remediation, removal or management. If the 95% UCL of the arithmetic average concentrations is below the acceptance criteria, and no concentrations are at a hotspot level, slight elevations above the acceptance criteria may be considered to pose insignificant human health or environmental risk. The location will hence be considered a non-exceedance requiring no further assessment, remediation, removal or management. The statistical analysis for the assessment of ACM is not considered appropriate.

7 Results and Discussion

7.1 Field Observations

The following field observations were noted across the course of the investigation:

- The site in its current form is being utilised as a public road and typically exhibits a medium to high traffic volume.
- Select areas within the road shoulder across the site have been artificially raised above the existing ground level to accommodate design specifications/requirements for road construction.
- Specific areas within the nature strip contained high levels of vegetation primarily consisting of invasive weed species.
- No visual/olfactory indications of contamination including hydrocarbon odours/sheen or staining were noted during the inspection.
- Foreign materials including general waste debris, tyre waste and domestic rubbish was observed throughout the site during the inspection.

7.1.1 Site Soil and Sub-soil Geology

The typical soil stratigraphy encountered during the field investigation is detailed in **Table 13** (refer to *Appendix II – Photographs* and *Appendix VI – Borehole Logs*). The upper soil profile on-site is consistent with that of topsoil with pockets of suspected reworked natural materials, followed by residual natural fat, lean clays, and weathered shale.

Table 13. Encountered sub-surface lithology.

Layer	Depth Range (m BGL)	Material Description	General Observations
FILL - Topsoil	0.0 – 0.5 m	Silty SAND / Gravelly SAND / Sandy GRAVEL / Gravelly SILT	Topsoil was typically encountered across the site and was typically limited to the top 0.5 metre lithological strata. On average, topsoil had an approximate depth in between 0.2 – 0.3 m BGL.
FILL – Engineered Materials / Reworked Natural Soils	0.5 – 1.8	Silty CLAY / Silty SAND	Engineered fill i.e., reworked clay was occasionally encountered below topsoil profile. Engineered fill was encountered within select locations across the site and typically occurred within the road shoulder or within built-up areas.
NATURAL - Residual Clays	0.3-1.9	Silty Clay / Clay	Natural lean, fat clays of low to medium plasticity were generally observed directly below the topsoil/engineered fill interface. Natural soils were typically encountered at shallow depths from 0.3m BGL to 0.6m BGL

Notes to Table 13
1- Refer to Appendix *VI – Test Pit Logs* for detailed lithological descriptions.

7.1.2 PID Field Screening

Each soil sample was screened for the presence of VOCs using a PID. The PID readings reported concentrations ranging from 0.0 ppm to 0.8 ppm. As the maximum recorded concentration was below the actionable criteria (15-20ppm), no further analysis or consideration was considered appropriate (refer to *Appendix VI – Test Pit Logs).*

7.2 Summary of Soil Analytical Results.

Based on the analytical results collected from soil samples analysed across the investigation area, all samples returned concentrations below that of the adopted human health and ecological assessment criteria prescribed land-use criteria (HIL-D/HSL-D) (refer to *Appendix IV – Analytical Results Tables* for individual sample results). The following sub-sections provide a brief discussion for each key analyte group when compared with the health and ecological assessment criteria outlined in the NEPM, 2013.

7.2.1 Heavy Metals

Of the 25 primary soil samples which were analysed, all samples demonstrated concentrations of heavy metals below the tier 1 human health screening levels and site-specific ecological assessment criteria prescribed for a commercial/industrial land use context (HIL/HSL-D).

The levels of heavy metals, except for concentrations of lead and zinc, remained relatively stable across all the samples analysed. Whilst variations in the concentrations of lead and zinc were identified, they were within the exhibited typical traits for the conditions of a disturbed environment and may be attributed to the sample heterogeneity and various low-level sources of contamination caused by the current land-use as a public road.

7.2.2 Organics (BTEXN, TPHs, PAHs, OCP/OPPs and PCBs)

The sample collected from 'TP239_0.2-0.3', exceeded the ecological screening levels (ESLs) for commercial and industrial use, recording a maximum concentration of benzo(a)pyrene at 1.53 mg/kg. Noting the primary sample size and the consistent fill soil profiles encountered, further statistical evaluation was undertaken by deriving the 95% UCL and standard deviation (STDEV) of the dataset via ProUCL 5.1. The resulting value returned below the adopted ecological threshold criteria, returning a 95% UCL value of 0.551 and a STDEV of 0.327, which is 50% less than the relevant investigation level (0.7mg/kg).

Due to the outcomes of the statistical evaluation the exceedance at 'TP239' is not considered a hot spot requiring notification of contamination as the 95% UCL is below the acceptance criteria with the following criteria:

- The standard deviation of the results should be less than 50% of the relevant investigation or screening level; and
- No individual exceedance should exceed 250% of the relevant investigation or screening level.

All remaining samples returned concentrations of organic analytes below the laboratory PQL, except for minor detections of PAHs within four samples of which all remained below the trigger criteria.

7.2.3 Per-and Poly-fluoroalkyl Substances (PFAS)

Five representative samples were selected from the fill profile and analysed for PFAS as a preliminary screening method. All five representative samples returned PFAS concentrations below the laboratory practical quantification limit (PQL) or 5µg/kg (refer to *Appendix IV – Results Tables* for individual sample results).

As the site is located within an area categorised as 'low risk' for PFAS contamination and all representative samples showed PFAS concentrations below the PQL, it can be inferred that the overall risk for PFAS is 'low'. Unless changes in the site condition are identified or the site is exposed to potential PFAS related activities, further assessment is not considered warranted.

7.2.4 Asbestos

Of the 39 test pits subjected to an asbestos visual assessment or 10L gravimetric screening, no potential asbestos containing material (PACM) was observed across the soil surface or observed during the on-site screening process. From the test pits completed, a total of ten representative 500mL soil samples were collected from the fill profile and analysed as per the NEPM, 2013.

No asbestos fines/fibrous asbestos or respirable fibres were detected within any of the ten 500mL soil samples analysed at the NATA accredited laboratory (refer to *Appendix IV – Analytical Results Tables* and *Appendix VII – Analytical Reports* and *Chain of Custody Documentation*).

As noted during the site inspection, specific areas across the investigation area were subject to limited accessibility and contained high levels of vegetation which impeded the accuracy of the visual inspection. Due to the current land use of the site and the probability of encountering asbestos, due care should be undertaken when conducting any future intrusive activities.

7.3 Duty to Report Contamination

For the purposes of section 60(3)(b) of the CLM Act, notification of contamination in, or on, soil on the land is required where:

- The 95 % UCL on the average arithmetic concentration of a contaminant in or on soil is equal to or above the HIL and/or HSL for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the NEPM (2013); or
- The concentration of a contaminant in an individual soil sample is equal to or more than 250% of the HIL and/or HSL for that contaminant for the current or approved use of the respective on-site land, as specified in Section 6, Schedule B1 of the NEPM (NEPC, 2013); and

- The contaminant has entered, or will foreseeably enter, neighbouring land, the atmosphere, groundwater, or surface water which is above that of the assessment criteria outlined in the Section 6, Schedule B1 NEPM (NEPC, 2013) or other approved guidelines and will foreseeably remain equal to or above the recorded level.

Based on the evidence and data acquired across the course of the investigation, ADE considers that AT & L Pty Ltd, does not have a duty to report contamination to the NSW EPA regarding on-site contamination of soils due to concentrations of the analysed analytes being below that of the adopted SAC.

8 Provisional Materials Analysis and Classification

8.1 Introduction

During the construction and earthworks involved in the proposed development, excavated material that cannot be beneficially re-used onsite, may be disposed off-site. To evaluate potential off-site disposal options, a preliminary material classification was conducted by comparing the results of the detailed site investigation to the NSW EPA Waste Classification Guidelines 2014. As final volumes of material to be removed from site have not been confirmed, they are not included within this preliminary classification.

8.2 Preliminary Waste Classification Assessment – Fill Materials (0.0 – 1.8 m BGL)

The chemical and asbestos results obtained across the investigation were assessed against the NSW EPA Waste Classification Guidelines 2014; 2016, to provide off-site disposal options for the material.

It is noted the number of samples collected from the fill soil profile across the site may not be sufficient for a complete characterisation of the materials as under the current waste sampling framework. The classification provided for fill materials should be used for indicative purposes only and may need further characterisation for greater representation.

8.2.1 Comparison against the NSW EPA Waste Classification Guidelines 2014

Table 14. Step 1 to Step 7 of Waste Classification Guidelines Part 1summarises Step 1 to Step 7 of the NSW EPA Waste Classification Guidelines: Part 1 – Classifying Waste (NSW EPA, 2014), which applies to the fill profile encountered across the site.

Table 14. Step 1 to Step 7 of Waste Classification Guidelines Part 1.

Step	Assessment
Step 1: Is the waste special waste? (Clinical and related waste, asbestos waste, waste tyres, and anything classified as special waste under an EPA gazettal notice)	☐ Yes ☒ No No asbestos was visually observed across the soil surface or recorded during the 10L gravimetric screening process No AF/FA or respirable fibres were detected within any of ten representative 500mL soil samples analysed. Due to the limitations associated with site accessibility and the presence of extensive vegetation, the visual assessment was impeded within specific areas and therefore, PACM may still be present within select areas across the investigation area.
Step 2: Is the waste liquid waste?	☐ Yes ☒ No
Step 3: Is the waste pre-classified?	☐ Yes ☒ No
Step 4: Does the waste possess hazardous characteristics?	☐ Yes ☒ No
Step 5: Chemical characterisation of the soil materials:	Refer to *Appendix IV – Results Tables* for a summary of the analytical results. ***Summary of Results*** A total of 24 exceedances involving specific heavy metals (lead and nickel) and PAHs (benzo(a)pyrene) were recorded above the contaminant threshold (CT) but below the specific contaminant concentration (SCC) assigned for General Solid Waste or CT1/SCC1.All remaining analytes exhibited concentrations below the CT1 criteria. A summary of the exceedances is provided in **Table 14.a.**

Step	Assessment

Table 14.a Summary of Exceedances against the CT1/SCC1 criteria assigned for General Solid Waste.

Sample I.D.	Depth (m BGL)	Analyte	Criteria assigned for General Solid Waste (CT1/SCC1) (mg/kg)	Maximum Concentration (mg/kg)
TP201_0.2-0.3	0.2-0.3	Lead	100 / 1,500	109.6
		Nickel	40 / 1,050	77.3
TP209_0.5-0.6	0.5-0.6	Lead	100 / 1,500	146.8
		Nickel	40 / 1,050	54.5
TP211_0.1-0.2	0.1-0.2	Nickel	40 / 1,050	48.0
TP213_0.2-0.3	0.2-0.3	Nickel	40 / 1,050	50.3
TP219_0.2-0.3	0.2-0.3	Lead	100 / 1,500	198.0
		Nickel	40 / 1,050	74.4
TP221_0.1-0.2	0.1-0.2	Lead	100 / 1,500	119.0
		Nickel	40 / 1,050	77.2
TP225_0.4-0.5	0.4-0.5	Lead	100 / 1,500	271.2
		Nickel	40 / 1,050	70.1
TP227_0.3-0.4	0.3-0.4	Lead	100 / 1,500	232.9
		Nickel	40 / 1,050	74.5
TP229_0.2-0.3	0.2-0.3	Nickel	40 / 1,050	80.8
TP231_0.1-0.2	0.1-0.2	Lead	100 / 1,500	278.8
		Nickel	40 / 1,050	128.8
		Benzo(a)pyrene	0.8 / 10	1.08
TP233_0.4-0.5	0.4-0.5	Lead	100 / 1,500	115.3
TP236_0.3-0.4	0.3-0.4	Nickel	40 / 1,050	87.9
TP239_0.2-0.3	0.2-0.3	Lead	100 / 1,500	215.1
		Nickel	40 / 1,050	102.6
		Benzo(a)pyrene	0.8 / 10	1.53

Outcomes of Statistical Evaluation

All primary fill samples underwent statistical evaluation of the dataset for lead, nickel, and benzo(a)pyrene. When sample concentrations were recorded below the PQL, the PQL was adopted for statistical purposes. The 95% UCL was calculated using ProUCL 5.1. All values derived for the specified analytes are articulated below:

- Lead: 95% UCL (Students t-UCL) - 150.8 (STDEV 83.61)
- Nickel: 95% UCL (Students t-UCL) – 70.65 (STDEV 33.42)
- Benzo(a)pyrene: 95% UCL (Students t-UCL) – 0.551 (STDEV 0.327)

Due to the derived 95% UCL calculation exceeding the CT1 criteria for both lead and nickel and the highly skewed nature of the data inferred by the resulting standard deviation, further consideration will need to be considered for the assessment of both lead and nickel for off-site disposal purposes (i.e., TCLP analysis).The remaining statistical calculation for benzo(a)pyrene returned acceptable outcomes for classification as 'General Solid Waste'.

Further Consideration – Toxicity Characteristic Leaching Procedure (TCLP)

Due to lead and nickel concentrations above the CT1 threshold and below the SCC1 threshold assigned for 'General Solid Waste', further consideration can be considered to undertake TCLP analysis in an attempt to retain the chemical classification as 'General Solid Waste'.

Step		Assessment
Step 6: Is the waste putrescible or non-putrescible?	☐ Putrescible ☒ Non-putrescible	Non-putrescible materials typically do not: • readily decay under standard conditions • emit offensive odours • attract vermin or other vectors (such as flies, birds, and rodents).
Preliminary Waste classification conclusion:	Based on the data and evidence collected over the course of the investigation, it is the opinion of ADE that: Asbestos ☐ was ☒ was not observed within any of the in-situ soil materials inspected or detected within any representative 500mL samples collected or observed at any location onsite Paint chips, indicators of PASS, hydrocarbon odours / staining ☐ were ☒ were not observed in the materials inspected, and The concentrations of Heavy Metals, TRHs, BTEX, PAHs, PCBs, OCPs, OPPs, PFAS and in the samples collected from within the subject soil materials ☒ indicatively meet ☐ indicatively do not/meet the NSW EPA (2014) criteria assigned for **'General Solid Waste'.** **The provided waste classification assessment should be used for indicative purposes only and does not offer a full waste classification of the material. Further sampling and analysis maybe required in the future to maintain compliance with the sampling and waste legislative framework.**	

8.2.2 Approved NSW EPA Resource Recovery Framework

Due to the location of the material and the inferred nature of future excavation works, further consideration may be considered for employing further assessment to assess for compliance against NSW EPA approved resource recovery framework. Benefits of considering resource recovery framework alternatives include the avoidance of the NSW EPA waste levy, potentially reducing disposal costs and contributing to a circular economy and project sustainability goals.

8.3 Preliminary VENM Compliance Assessment – Natural Materials (0.3-1.9 m BGL)

Following a site inspection, the natural materials encountered onsite were deemed to be consistent with the local geology. No visual or olfactory indicators of contamination observed within the natural materials during the sampling investigation. **Table 15** provides a preliminary assessment of the material and observations against the requirements for validating material as VENM, in accordance with the POEO Act 1997.

The Protection of the Environment Operations Act 1997 (POEO Act) defines virgin excavated natural material (VENM) as:

> *'natural material (such as clay, gravel, sand, soil, or rock fines):*
>
> *(a) that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining, or agricultural activities and*
>
> *(b) that does not contain any sulfidic ores or soils or any other waste*
>
> *and includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved for the time being pursuant to an EPA Gazettal notice.'*

Table 15. Requirements for 'VENM' as per the POEO Act 1997.

Criteria	Assessment
Is the material naturally occurring such as clay, gravel, sand, soil, or rock fines?	☒ Yes ☐ No
Has the material been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining, or agricultural activities?	☒ Yes ☐ No
Does the material contain any sulfidic ores, or any other waste?	☐ Yes ☒ No
Does the material meet the chemical requirements to be considered VENM? Refer to *Appendix IV – Results Tables* and discussion below. All five representative natural samples collected from the investigation area returned concentrations below the adopted geological background ranges prescribed by ANZECC (2000) and D.A. Berkman (1989).	☒ Yes ☐ No
Additional Comments: The number of samples collected for natural material classification across the site may not be sufficient for a complete characterisation of the materials as VENM. The classification provided for the natural materials is limited to the number of natural samples analysed and may need further characterisation for greater representation.	

8.4 Preliminary Classification and Conclusions

Table 16 provides a summary of the preliminary materials classification analysis undertaken throughout the investigation.

Table 16 Preliminary Materials Classification

Soil Profile	Depth Range (m BGL)	Matrix Description	Area of site	Preliminary Classification
FILL - Topsoil	0.0 – 0.5 m	Silty SAND / Gravelly SAND / Sandy GRAVEL / Gravelly SILT	Entire site	**General Solid Waste** (pending the outcomes of TCLP analysis).
FILL – Engineered Materials / Reworked Natural Soils	0.5 – 1.8	Silty CLAY / Silty SAND		
NATURAL - Residual Clays	0.3-1.9	Silty Clay / Clay	Entire site, noting limited natural material characterisation	**Virgin Excavated Natural Material (VENM)**

Please note that the classifications provided are noted to be preliminary and should be used for indicative purposes only. Additional sampling will likely be required to achieve a representative sampling distribution for the characterisation of natural soil materials. If the TCLP analysis yields leachable concentrations above the TCLP criteria assigned for the corresponding classification threshold (TCLP1/TCLP2), the material may subsequently be classified at higher classification.

9 Data Quality Assessment

To carry out the assessment of the data acquired in the course of the investigation, the US EPA Guidelines including, but not limited to, the *'Guidance on Assessing Quality Systems'* (2003) and *'Guidance on Systematic Planning Using the Data Quality Objectives Process'* (2006) were used.

The guidelines provide a general strategy for assessing data quality criteria and performance specifications for decision making. The following is the output from most of the steps of the data quality assessment (DQA) Process provided in the guidelines. Quality control reports from the laboratories for sample analyses were reviewed. The review included an assessment of blank, duplicate, control, and spiked samples. The review of the QA/QC program was conducted in accordance with NSW EPA recommendations.

In order to carry out the data quality assessment for the lab analytical results acquired in the course of this investigation, the US EPA Guidelines were used. The Guidelines provide a general strategy for assessing data quality criteria and performance specifications as part of decision making. The following assessment methodology addresses most of the steps of the data quality assessment (DQA) process provided in the guidelines.

9.1 Data Review

Quality control reports from the laboratories subcontracted for sample analyses were reviewed. Laboratory blank samples, duplicate samples, control samples, spiked samples and method blanks were evaluated.

This review was conducted as per the items recommended by the NSW EPA for inclusion in the consultants' reports. Some additional recommendations from the US EPA methodology, as referred to by AS 4482.1, were also followed.

Following the QA/QC assessment, the validity of the results is determined based on the assessment criteria adopted with the results expressed as either valid or invalid data (acceptable or unacceptable). An overall summary of the QA/QC assessment can be found in *Appendix V – QA/QC Output.*

9.2 COC

Australian Standard AS 4482.1 defines the chain-of-custody documentation as the link in the transfer of samples between the time of collection and arrival at the laboratory.

The COC utilised by ADE included the items recommended by the Standard:

- The person transferred the samples;
- The person who received the samples;
- Date the samples were collected;
- Date the samples were received at the laboratory; and
- Contact name and details for the client.

Copies of the COCs completed during the course of this investigation are provided in in *Appendix VII – Analytical Reports and Chain of Custody Documentation*.

9.3 Field Equipment Calibration

Field equipment requiring calibration included the use of a photo-ionisation detector (PID). The PID was calibrated by an external qualified technician before the sampling events and further calibrated onsite i.e., bump tested (as required) by a suitably qualified environmental consultant (refer to *Appendix VIII – Equipment Calibration Certificates* for the attached calibration certificate).

9.4 Record of Holding Times

The objective is to ascertain the validity of the analytical results based on meeting the holding time for the samples from the time of collection to the time of analysis. The technical holding time criteria for soil and groundwater samples are summarised in **Table 17**.

Table 17. Recommended Storage, Preservation and Maximum Holding Times.

Analyte	Container	Recommended Preservation	Maximum Recommended Holding Time	Reference
Metals (excluding Hg & Cr VI)	P (MF)	HNO_3, C	6 months	APHA Table 1060:I
Metals (Cr VI)	P (MF)	NaOH, C	28 days	USEPA 1669
Metals (Hg)	P (MF)	$HN0_3$	28 days	APHA Table 1060:I
Leachable Metals	G	H_2SO_4	28 days	AS 4439.3
VOCs	G	Nil, C	14 days	USEPA SW-846-8260B
Phenols	G	Nil, C	14 days	USEPA SW 846-8015A
PAHs	G	Nil, C	14 days	
PCBs	G	Nil, C	14 days	
TRHs	G	Nil, C	14 days	USEPA 8260D
OCPs/OPPs	G	Nil, C	14 days	USEPA3510/8270

Notes to Table 17
*Recommended Preservation: ZH - Zero Headspace; C - Chilled; PET- Polyterepthalate
*Containers: G - Glass; P (MF) - Plastic (Metal Free); P - Plastic (Polyethylene)

All samples collected throughout the investigation were submitted within two days of the initial soil sampling. As such, the holding times of the soil samples submitted to their elected laboratories (SLS, Envirolab and Eurofins) meet the recommended criteria (refer to *Appendix VII – Analytical Reports and Chain of Custody Documentation*).

9.5 Laboratory Analytical Methodology and Accreditation

All chemical analysis was undertaken by NATA accredited laboratories using US EPA approved methodology. Refer to *Appendix VII – Analytical Reports and Chain of Custody Documentation* for the details of the adopted laboratory analytical methods and their respective accreditations. The laboratory methodologies and the respective accreditations of SLS and Eurofins were deemed suitable for the required analyses.

9.6 Detection Limits / Practical Quantification Limits

The smallest amount of a substance that can be detected by the laboratories used – ALS and Eurofins, above the background method noise in a procedure and within a stated confidence level is referred as detection limit.

Current practice identifies several detection limits including the following: (1) the instrument detection limit (IDL), (2) the lower-level detection limit (LLD), the method detection limit (MDL) and the practical quantitation limit (LOR).

The relationship among these levels is approximately IDL: LLD: MDL: LOR = 1: 2: 4: 10. Refer to SLS, ALS and Eurofins for the list of LORs provided by their respective laboratories. When dilution of a sample is involved in the sample preparation, the method detection limit is adjusted by the dilution factor.

9.7 Field QA/QC

A summary of the QA/QC samples collected during field works is provided in **Table 18.**

Table 18. Summary of Field QA/QC Samples.

Field QA/QC	Frequency	Sample Details	Field QA/QC Frequency Achieved?
Blind replicate samples	1 per 20 samples	Two blind replicate samples were collected during the investigation: • DSI2.BR1 is an intra-laboratory replicate of the primary sample of DSI2_TP213_0.2-0.3. • DSI2.BR2 is an intra-laboratory replicate of the primary sample DSI2_TP233_0.4-0.5.	Yes[1]
Split Replicate samples	1 per 20 samples	Two blind replicate samples were collected during the investigation: • DSI2.SR1 is an intra-laboratory replicate of the primary sample of DSI2_TP213_0.2-0.3. • DSI2.SR2 is an intra-laboratory replicate of the primary sample DSI2_TP233_0.4-0.5.	

9.7.1 Blind and Split Replicate Samples

Australian Standard 4428.1 and the NEPM (2013) specifies the typical Relative Percentage Data (RPD) values for replicate samples to be below 30%. If both samples' values are less than the practical quantification limit (PQL), the RPD is not calculated. Valid values are sample concentrations that fall within the control limits of 0-30% described above. Invalid values are concentrations that are outside of the control limits.

- Two intra-laboratory blind replicate samples were collected to determine the variability of the sampling process. The replicate sample was collected simultaneously from the same source and under identical conditions as the primary samples.
- The blind replicate samples showed 160 valid values and 4 invalid values.
- Two inter-laboratory split replicate samples were collected to measure the variability between the laboratory analysis process.
- The variability assessment showed 155 valid values and 9 invalid values.

9.8 Laboratory QA/QC

9.8.1 Laboratory Duplicates

- Duplicate sample determinations were provided by the laboratories to demonstrate acceptable method precision at the time of analysis.
- Duplicates are generally analysed at a frequency of 1 for every 10 samples. Australian Standard 4482.1 provides an acceptable range of the RPD values up to 50% for quality control samples, depending on the magnitude of results in comparison to the LOR.
- Analysis of laboratory duplicates showed 300 valid values and nil invalid values.

9.8.2 Laboratory Blanks

- The assessment of blank analysis results was conducted to determine the existence and magnitude of contamination resulting from laboratory activities.
- No contaminants were found within any of the blanks analysed by the laboratory resulting in 202 valid values and nil invalid values.

9.8.3 Laboratory Spikes and Surrogates

- Laboratory limits of approximately 70-130% for inorganics/metals and 60-140% for organics were used to validate matrix spikes and laboratory surrogate samples.
- Analysis of spikes and surrogates showed 90 valid values and nil invalid values.

9.8.4 Laboratory Control Samples

- Laboratory limit of approximately 70-130% for inorganics/metals and 60-140% for organics were used to validate laboratory control samples.
- Analysis of the laboratory control samples showed 150 valid values and nil invalid values.

9.9 QA / QC Data Evaluation

The qualitative and quantitative descriptors, DQIs were used in interpreting the degree of acceptability of the data acquired in the course of the investigation. The principle DQIs are precision, accuracy, representativeness, comparability, and completeness referred to by the acronym PARCC.

Precision and accuracy are quantitative measures, representativeness and comparability are qualitative, and completeness is a combination of both quantitative and qualitative measures. **Table 19** summarises the DQO reconciliation.

Table 19. Summary of DQO Reconciliation.

QA/QC Item	DQO Criteria	Valid Data	Invalid Data	Completeness	Conclusion
Laboratory duplicate samples	95%	300	0	100.00%	Acceptable
Laboratory blank samples	100%	202	0	100.00%	Acceptable
Laboratory spike/surrogate recoveries	95%	90	0	100.00%	Acceptable
Laboratory Control samples	95%	150	0	100.00%	Acceptable
Blind Replicate Samples	75%	160	4	97.56%	Acceptable
Split Replicate Samples	75%	155	9	94.51%	Acceptable
Overall Completeness:	**95%**	**1,057**	**13**	**98.77%**	**Acceptable**

Notes to Table 19
*LOR – Limits of Reporting

Following a review of the data, the recorded ‘invalid’ results can be attributed to the difficulties in obtaining a homogeneous sample from heterogeneous matrices. All invalid values obtained from the RPD table were of heavy metal concentrations and were obtained from the fill matrices. Due to historic and current use of the site as a main road for commuters and haulage trucks, the variations in heavy metal concentrations can be attributed to the heavy traffic use of the road. The ratio of the valid data to the total number of the analyses conducted in the QA/QC program yielded 98.77%, thereby meeting the DQO criteria of 95% completeness.

10 Revised conceptual site model

Following the completion of the current investigation, a revised CSM was developed in accordance with the findings of the field investigation works and NEPM Schedule B2 – NEPM (2013), to assess the plausible connections between potential contamination sources and the receptors.

The potential contamination sources identified during the provisional CSM included the suspected use of historical cut and fill practices associated with the road shoulder construction, the presence of suspected hazardous materials including asbestos and coal tar, regular automotive vehicular activity (i.e., emissions, fuel leaks etc), run-off associated with pesticide/herbicide applications, 'fly-tipping' of household waste, timber power poles and the presence of unknown stockpiled soil and waste materials.

Based on the collected analytical data, it can be inferred that there is currently a 'moderate to low' risk associated with the chemical contamination status of the soil materials within the site. Tyres were observed sporadically throughout the site however the remediation action required for these potential sources of contamination is isolated to the physical locations where tyres were observed.

Table 20. Revised CSM.

<table>
<tr><th>Potential Contamination Source</th><th>COPCs</th><th>Potential Exposure Pathways and Transport mechanisms</th><th>Potential Receptors</th><th>SPR Link Comments</th><th>Pathway Complete or incomplete?</th></tr>
<tr><td>Historical un-controlled fill practices</td><td rowspan="2">Heavy metals, TRHs, BTEXN, PAHs, OCPs/OPPs, PAHs, Asbestos</td><td rowspan="5">• Dispersion airborne particulates due to wind following disturbance.
• Downward migration and leaching of contaminants through soil.
• Lateral migration via surface water run-off.
• Lateral migration via groundwater towards nearby surface water discharge zones.
• Transport of contaminants by human and/or mechanical disturbance.
• Air dispersion of dust.
• Physical contact with contaminated media; and
• Biomagnification along food chains.</td><td rowspan="5">• Workers involved with construction work.
• Future site users</td><td>No asbestos containing materials observed or detected. No soil exceedances of contaminants of concern.</td><td rowspan="2">Incomplete – Moderate risk. Potentially complete during earthworks. , future site construction.</td></tr>
<tr><td>Presence of unknown waste including stockpiles and tyre waste</td><td>Visual observations noted the presence of tyre waste sporadically throughout the site.</td></tr>
<tr><td>Run-off associated with herbicide/pesticide application from agricultural land</td><td>Heavy metals, OCP/OPPs</td><td>No detections of OCPs/OPPs were identified within any of samples collected across the investigation.</td><td>Complete – low risk.</td></tr>
<tr><td>'Fly-tipping' of household waste products.</td><td>Heavy metals, BTEXN, PAHs, TRHs/TPHs</td><td>Consistent indications of fly-tipping were noted during the site inspection. Activity is inferred to continue with the continued operation as a public road.</td><td>Incomplete – low risk. Activity is likely to continue for the duration of the land-use as a public road.</td></tr>
<tr><td>Timber Power Poles</td><td>Heavy metals, PCBs, Asbestos</td><td>Timber power poles were noted across the site. Upon decommissioning, there is potential for cross-contamination of the surrounding soils to occur.</td><td>Incomplete – Low -risk. Potentially complete following the construction of the site.</td></tr>
</table>

Presence of Hazardous Material (i.e., asbestos and coal tar)	PAHs, Asbestos, Coal Tar	• Transport of contaminants by human and/or mechanical disturbance. • Inhalation of airborne contaminants. • Air dispersion of dust.	• Low to moderate risk for inhalation with free fibres. • Low risk of vapour inhalation from organic contaminants or free particulates .	No asbestos was identified during the site inspection however, isolated finds may still be present. Coal tar may be present within asphalt/bitumen matrices.	Incomplete – Low to moderate risk. Potentially complete following the construction of the site.
High Automotive Traffic Activity (i.e., fuel leaks, emissions etc)				No visual/olfactory indicators of hydrocarbon odours of leaks were noted during the site inspection.	Incomplete – Low risk. Activity is likely to continue for the duration of the land-use as a public road.

11 Conclusions and Recommendations

Based on the findings of the site investigations the following is concluded and recommended:

11.1 Field Observations

The following key observations were noted across the course of the investigation:

- The site in its current form is being utilised as a public road and typically exhibits a medium to high traffic volume.
- Select areas within the road shoulder across the site have been artificially raised above the existing ground level to accommodate design specifications/requirements for road construction.
- The local lithology was typically separated into two distinct soil profiles consisting of:
  - Fill Materials (Topsoil / Engineered Fill) – Extended from the soil surface to a maximum depth of 1.8 m BGL
  - Natural Soils (Residual Clays and Bringelly Shale) – Extended from 0.3 to a maximum depth of 1.9 m BGL.
- Specific areas within the nature strip contained high levels of vegetation primarily consisting of invasive weed species.
- No visual/olfactory indications of contamination including hydrocarbon odours/sheen or staining were noted during the inspection.
- Foreign materials including general waste debris, tyre waste and domestic rubbish was observed throughout the site during the inspection.

11.2 Soil Assessment

A total of 25 primary soil samples were submitted across the investigation to assess the chemical contamination status of the soils across the site. Based on the findings of the investigation, the following conclusions were made:

- All samples demonstrated chemical concentrations below the human health screening criteria for a commercial industrial land use context (HIL/HSL D).
- One exceedance was recorded against the site-specific EIL/ESL criteria for benzo(a)pyrene, exhibiting a maximum value of 1.53 mg/kg. Following statistical evaluation via deriving the 95% UCL, the resulting calculation returned below the relevant acceptance criteria.
- Most organic analytes including PFAS recorded concentrations below that of the laboratory PQL except for minor detections of PAHs within select samples.
- No asbestos was observed across the soil surface, recorded during the 10L gravimetric process, or recorded within any of 500mL soil samples submitted for asbestos analysis.

Based on the analytical results collected from soil samples analysed across the site, the soils are considered chemically suitable for the ongoing land-use as commercial/industrial land (HIL C/HIL D) or a public road.

11.3 Provisional Materials Analysis and Classification Assessment

The chemical and asbestos results obtained across the investigation were assessed against the NSW EPA Waste Classification Guidelines 2014; 2016, to provide indicative off-site disposal options for the material. The classification provided for fill materials should be used for indicative purposes only and may need further characterisation for greater representation. In summary:

- Of the samples analysed, a total of 24 exceedances were identified against the CT1 criteria for heavy metals and PAHs assigned for 'General Solid Waste'. All concentrations remained below the SCC1 threshold.

- Pending the outcomes of the TCLP analysis, the samples collected from the fill materials (Topsoil/Engineered fill) maybe considered suitable as 'General Solid Waste'.
- The samples collected from the natural soil materials returned concentrations below the adopted geological background ranges (ANZECC, 2000; D.A. Berkman, 1989) and thus maybe considered suitable for classification as Virgin Excavated Natural Material (VENM).

Due to the limited dataset and sampling undertaken, further sampling maybe required to produce a final classification assessment for the material. The provided assessment should be used for indicative purposes only.

11.4 Limitations, uncertainties, and assumptions

Due to site limitations including accessibility, safety issues and the presence of existing infrastructure including the services, the following are considered to be limitations, uncertainties and/or assumptions relevant to the investigation:

- The distribution of the completed sampling locations was primarily defined by spatial and safety restrictions present on-site. Based on the achieved distribution and sampling density, certain areas of the site have limited data to fully assess the nature and extent of potential contamination
- The lateral limit and vertical limit of the investigation is defined within *Appendix III – Data Quality Objectives*. Contamination may be present within areas which have not been adequately assessed or at depths greater than the prescribed investigation limit.
- Due to the high traffic volume and the presence of high vegetation, certain areas would not be fully assessed or accessed and therefore, contamination may still be present within specific areas across the site.

11.5 Prescribed Land-Use Suitability

Considering the conclusions outlined above, ADE considers that the site is suitable for the prescribed land use as commercial/industrial land (HIL/HSL-D) with minor landscaped areas. The site is not considered to warrant the requirement of a remediation action plan (RAP). All unexpected finds must be managed in accordance with construction sub-management plans including asbestos management plans.

11.6 Recommendations

- Due to the current land-use of the site, ADE recommends that construction sub-management plans i.e., AMP, CEMPs are produced to manage unexpected finds encountered during the construction phase.
- As required per the NEPM, 2013, professional judgement should be employed when considering the aesthetic quality of soil materials and care should be taken to ensure the surface of soils are free of rubbish and debris.
- Further consideration should be given to employing approved NSW EPA resource recovery framework to achieve a cost-effective solution to future waste management and contribute further to circular economy and sustainability practices.

12 Limitations and Disclaimer

This report has been prepared for the exclusive use of the client and is limited to the scope of the work agreed in the terms and conditions of contract (including assumptions, limitations and qualifications, circumstances, and constraints). ADE has relied upon the accuracy of information and data provided to it by the client and others.

ADE has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. No one section or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendixes and attachments. The report is an integral document and must be read in its entirety.

To the fullest extent permitted by law, ADE does not accept or assume responsibility to any third party (other than the client) for the investigative work, the report or the opinions given.

The scope of work conducted, and report herein may not meet the specific needs (of which ADE is not aware) of third parties. ADE cannot be held liable for third party reliance on this document. Any third party who relies upon this report does so at its own risk.

The subsurface environment can present substantial uncertainty due to it complex heterogeneity. The conclusions presented in this report are based on limited investigation of conditions at specific sampling locations chosen to be as representative as possible under the given circumstances. However, it is possible that this investigation may not have encountered all areas of contamination at the site due to the limited sampling and testing program undertaken.

The material subject to classification pertains only to the site and subject area outlined within the report and must be consistent with the waste description reported. If there are any unexpected finds that are not consistent with this classification, ADE must be notified immediately.

ADE does not verify the accuracy or completeness of, or adopt as its own, the information or data supplied by others and excludes all liability with respect to such information and data. To the extent that conditions differ from assumptions set out in the report, and to the extent that information provided to ADE is inaccurate or incomplete or has changed since it was provided to ADE, the opinions expressed in this report may not be valid and should be reviewed.

ADE's professional opinions are based upon its professional judgement, experience, training, and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. ADE has limited its investigation to the scope agreed upon with its client.

This Limitation and Disclaimer must accompany every copy of this report.

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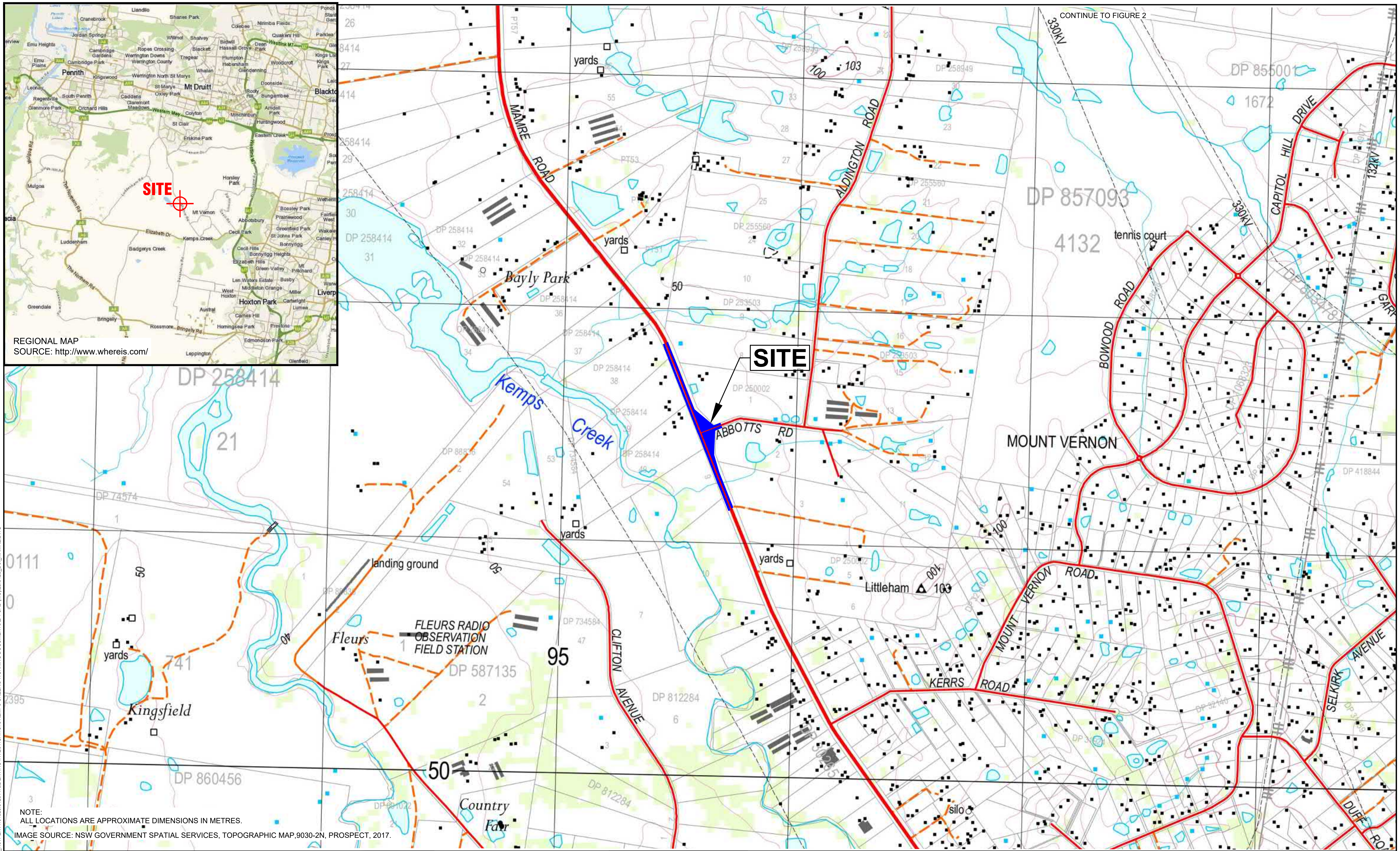
Appendix I – Figures



NOTE:
ALL LOCATIONS ARE APPROXIMATE DIMENSIONS IN METRES.

IMAGE SOURCE: NSW GOVERNMENT SPATIAL SERVICES, TOPOGRAPHIC MAP,9030-2N, PROSPECT, 2017.

PLOT DATE: 13/04/2023 11:41:12 PM DWG FILE: W\1_NSW ENV\101023.0120 AT&L ENVIRO INVESTIGATION, KEMPS CREEK\5 WORKING DOCUMENTS\5.4 CAD (MC)\23.0120_DSI_MAMRE.DWG

revision

no.	description	drawn	approved	date
A	FIRST ISSUE	MC	aAH	13/04/23

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SCALE 1:15000@A3 METRES

drawn	MC
approved	AH
date	13/04/2023
scale	AS SHOWN
original size	A3

client: AT&L PTY LTD

project: DETAILED SITE INVESTIGATION
MAMRE ROD AND ABBOTTS ROAD UPGRADE
KEMPS CREEKS, NSW

title: LOCALITY PLAN - MAMRE ROAD

project no: 23.0120_DSI | figure no: FIGURE 1 | rev: A

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LEGEND

SUBJECT AREA (ROAD EXCLUDED)

TP TEST PIT LOCATION (CHEMICAL/ASBESTOS SAMPLE)

TP TEST PIT LOCATION (VISUAL ASBESTOS PRESENCE/ABSENCE)

NOTE:
ALL LOCATIONS ARE APPROXIMATE DIMENSIONS IN METRES.

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM,

PLOT DATE: 14/04/2023 4:26:24 PM DWG FILE: W:_NSW ENV\10\1023.0120 AT&L ENVIRO INVESTIGATION, KEMPS CREEKS\WORKING DOCUMENTS\Z 4 CAD (MC)\23.0120_DSI_MAMRE.DWG

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	A	FIRST ISSUE	MC	aAH	13/04/23

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SCALE 1:5000 @A3 METRES

drawn	MC
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date	13/04/2023
scale	AS SHOWN
original size	A3

client: AT&L PTY LTD

project: DETAILED SITE INVESTIGATION
MAMRE ROD AND ABBOTTS ROAD UPGRADE
KEMPS CREEKS, NSW

title: SAMPLE LOCATION PLAN - MAMRE ROAD

project no: 23.0120_DSI | figure no: FIGURE 2 | rev: A

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Appendix II – Photographs

Photograph 1. South facing view of Mamre Rd, from TP205. Date: 27.03.2023.

Photograph 2. North facing view of Mamre Rd, from TP205. Date: 27.03.2023

Photograph 3. Representative mixed waste debris and overgrown weeds along roadside of site, encountered at TP234. Date: 27.03.2023

Photograph 4. North facing view of southern portion of site taken from TP234. Date: 27.03.2023

Photograph 5. Eastern facing view of southern portion of site taken from TP234. Date: 27.03.2023.

Photograph 6. South-eastern facing view of site from TP234. Date: 27.03.2023.

Photograph 7. Representative image of surrounding properties to the east of the site, taken from TP234. Date: 27.03.2023

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Photograph 8. Representative image of rural properties to the west of the site. Date: 28.03.2023

Photograph 9. Typically encountered soil lithologies within northern portion of Mamre Road, taken at TP206. Date: 27.03.2023.

Photograph 10. Typically encountered topsoil across the site, taken at TP207. Date: 27.03.2023

Photograph 11. Representative natural clay material encountered at TP211. Date: 27.03.2023.

Photograph 12. Representative topsoil encountered within TP219. Date: 28.03.2028

Photograph 13. Representative image of overgrown weeds adjacent to roadside which limited excavator access for safety reasons, at TP 223. Date: 28.03.2023.

Photograph 14. Representative image of the soil matrix encountered at TP 224. Date: 28.03.2028

Photograph 15. View of TP 224 facing west with overgrown weeds, domestic waste including bucket and trough alongside old metal wire fencing. Date: 28.03.2023.

Photograph 16. Mixed fill materials encountered within TP 234. Date: 27.03.2023

Photograph 17. Encountered natural clay materials in TP235. Date: 27.03.2023.

Photograph 18. Encountered natural materials within TP236. Date: 27.03.2023.

Photograph 19. Domestic waste materials encountered within TP237. Date: 28.03.2023.

Photograph 20. Representative fill materials encountered at TP239. Date: 28.03.2023.

Appendix III – Data Quality Objectives

Data Quality Objectives

The investigation was designed using the data quality objectives (DQO) as defined by the US EPA and the NSW EPA in the "Guidelines for the NSW DEC Site Auditor Scheme" (3rd Edition), (NSW EPA, 2017) and Australian Standard AS 4482.1 2005 (AS, 2005).

The DQO process consists of a seven-step planning approach to facilitate the development of qualitative and quantitative statements that specify the quality of the data required to support decision making within the scope of the investigation. This process utilises systematic planning and statistical hypothesis testing to differentiate between two or more clearly defined alternatives.

Step 1 – State the Problem

A review of available historical information and previous environmental investigations have inferred that the site has a medium to high potential for contamination resulting from past and present land uses. Potential sources of contamination were identified to include; the presence of hazardous materials including asbestos, historic cut and fill practices, unknown stockpiled materials, and potentially contaminating historical and current land uses.

A targeted environmental investigation was therefore undertaken to assess soil conditions within the site. The following data collected was then used to evaluate and characterise the soil conditions across the site to inform the need for remediation and further management (if required).

Step 2 – Identify the Decision

The purpose of the investigation is to focus on current and future human health and environmental risks associated with potential contamination. The decisions that need to be made on the contamination status of the site include:

- The extent of contamination (if present) in soil at or adjacent to the site that would preclude the current land use of the site;
- The extent of contamination (if present) in soil at the site that has the potential to:
    - Impact upon a possible future land use of the site;
    - Create a human or environmental risk within the site; and
    - Migrate to surrounding receptors.
- If contamination above the adopted criteria is identified, then a further assessment would be undertaken to assess feasible remediation/management options.

The contamination would be considered not to pose a risk if analytical results for the media sampled and analysed are less than the adopted SAC presented in **Section 6** or are determined by a site-specific risk assessment not to represent an unacceptable risk to human health and/or the environment. Where an unacceptable risk is indicated, remediation and/or management options will need to be considered to address the risk and meet the site objectives.

Identify Inputs to the Decision

The CoPCs selected were determined through on-site observations following the completion of a desktop study. To address the decision questions outlined in Step 2 of the DQOs above, the following inputs to the decision have been identified:

- A review of previous environmental investigations undertaken at the site;
- A review of the historical and current use of the site;
- Investigation of the existing soil conditions at the site; and
- Comparison with the site assessment criteria as outlined in **Section 6.**

Step 4 – Define the Boundaries of the Study

This step provides a detailed description of the spatial and temporal boundaries of the study area. These characteristics define the population of interest and any practical considerations for the study area (refer to **Table 21).**

Table 21. Summary of the Study Boundaries.

Spatial Boundaries	The works performed for this report were restricted to the physical site boundaries, as shown in *Appendix I – Figures.* The vertical boundaries of the proposed investigations are limited to a maximum depth of investigation, being an approximate 1.9 m BGL.
Temporal Boundaries	The investigation works were undertaken during late March 2023.
Investigation Limit	The limit of the investigation has been undertaken to provide information as to the level and type of contamination within the site.
Constraints	Time, cost, redesign, remediation, and inaccessible areas across the site were considered constraints to the investigation.
Receptors of Concern	The potential receptors of concern are outlined in **Section 4.4.**

Step 5 – Develop a Decision Rule

The purpose of this step is to define the parameters of interest, specify the action level and combine the outputs of the previous DQO steps into an "if…then…" decision rule that defines the conditions that would cause the decision-maker to choose alternative actions. The types of data quality required during the fieldwork, the laboratory components of the investigation and the acceptable limits for this data as provided in **Section 9.8 .** A summary of the decision rules is included in **Table 22.**

Table 22. Summary of the Decision Rules.

Decision Rules	Based on the data quality types and limits the following decision rules applied: • If the relative percent difference (RPD) values for blind replicates or split samples are outside the acceptable limits, then there may have been errors in a laboratory analysis process. When assessing duplicate pairs with elevated RPD values, the project Environmental Scientist will check the laboratory results and examine the nature of the sample being evaluated since heterogeneous samples can often provide high RPD values. If it is believed that irreversible errors had occurred during the laboratory process, then an additional investigation may be deemed to be required to resolve the decision question; • Should greater than 5% of the laboratory QA / QC data fail to meet the acceptable limits outlined in this report, the laboratory may be requested to re-analyse samples or justify the analytical results; • For the analysis of investigation samples, if the absolute value of the measured concentration of a parameter or compound is above the nominated SAC; and were deemed suitable for 95% UCL analysis, then the subject material can be considered suitable to remain onsite; and • 95% UCL data will only be considered where the standard deviation of the data set is less than 50% of the SAC, and the maximum concentration is less than 250% of the SAC. Samples exceeding these criteria will be excluded from the dataset and treated as a hotspot.

Step 6 – Specify Acceptable Limits on Decision Errors

This step is to establish the specific limits on decision errors, which were used to determine the targets for limiting uncertainty in the data. Data generated during the environmental investigation needs to be appropriate to allow decisions to be made with confidence. The specific limits for this investigation were based on appropriate guidance from the NSW EPA, NEPC (2013), AS 2005 and appropriate indicators of DQIs used to assess QA / QC for field sampling and handling.

To assess the suitability of the analytical data obtained prior to making decisions, the data was assessed against pre-determined Data Quality Indicators (DQIs) to assess precision, accuracy, representativeness, comparability, and completeness (PARCC parameters), as outlined in AS 2005. The acceptable limit on decision error was 95% compliance with the DQIs. The pre-determined DQIs specified for the investigation works are discussed below in relation to the PARCC parameters as summarised in **Table 23.**

Table 23. Summary of Acceptable Limits on Decision Errors.

Precision	• Sampling and analysis of field blind duplicates and split replicates to be undertaken at a minimum rate of 1 per every 20 samples. • Laboratory duplicate analysis to be undertaken by the testing laboratory at a minimum rate of 1 per 20 samples. • Field and laboratory RPD values to be less than 30% for analytical results greater than (>) 30 times the laboratory LOR, less than (<) 50 % for analytical results between 10 and 30 times the laboratory LOR and a control limit of ± the LOR if either the sample or duplicate value is less than 10 times the laboratory LOR.
Accuracy	• Laboratory surrogate spike recoveries were to be within 70 – 130% for all organic analyses (if applicable). • Laboratory control sample (LCS) recoveries to be assessed at a rate of one (1) sample per laboratory batch. LCS recoveries were to be within 70 – 130% (if applicable). • Matrix spike (MS) recoveries are to be assessed at a rate of one sample per laboratory batch. LCS recoveries were to be within 70 – 130% (if applicable).
Representativeness	• Appropriate sampling methods undertaken for all samples. • All samples were extracted and analysed within holding times.
Comparability	• Sampling was completed in accordance with the recommended methods outlined within **Section 5**, Systematic planning for the collection of environmental data, in Schedule B2 of NEPM (2013), AS 2005 and ADE Standard Operating Procedures (SOPs). • Standard analytical methodologies were used by laboratories that were NATA accredited for the requested analyses. • Laboratory LORs were appropriate and consistent for the objectives of the validation assessment.
Completeness	• Field documentation complete and appropriate for all samples to meet the objectives of the validation assessment. • Sample description and COC documentation complete and appropriate for all samples to meet the objectives of the validation assessment. • The sampling frequency and findings of the QA/QC sample review valid for >95% of samples.

Step 7 – Optimise the Design for Obtaining Data

The organisation of the data collection and analysis design for optimising the generation of data to satisfy the DQOs and the objective of the investigation has been achieved via the following procedures outlined in **Table 24.**

Table 24. Summary of Procedures to be Undertaken to Optimize the Design for Obtaining Data.

Pre-approved Work Plan	The sampling plan for the investigation at the site has been developed to assess the concentrations of contaminants present in soils at the site through the implementation of the components outlined within NEPM (2013), AS 4482.1 (2005) and AS/NZS 5667.1 (1998).
Compliance with EPA Guidelines	• Use of appropriate techniques for the sampling, storage, and transportation of samples. • Implementation of NATA certified laboratory using analytical procedures as outlined in NEPM (2013). • Use of a secondary laboratory for split samples which is NATA certified for the required analyses.

Appendix IV – Results Tables

Table A - Analytical Results Table_NEPM 2013 and NEMP 2020

					Asbestos					Physical	Metals								BTEX								
					Asbestos (Presence/Absence)	Weight of Fibre Cement	10L Soil Weights	Non-Friable Asbestos	Asbestos Fines + Fibrous Asbestos	Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene (VOC)	Total BTEX	C6-C9 Fraction
					Y/N	g	kg	% w/w	% w/w	%	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	4	0.3	1	1	1	0.1	1	1	0.2	0.5	1	2	1	1	1	2	25
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil								0.05	0.001		3,000	900		240,000	1,500	730	6,000	400,000									
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																			3 | 3 | 3 | 3					230			
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																			75	135	165			180			
NEPM 2013 Table 1B(5) Site-Specifc EIL - Comm/Ind											160		910	290	1,800		250	710							370		
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																											
PFAS NEMP 2020 Ecological direct exposure																											
PFAS NEMP 2020 Ecological indirect exposure																											
PFAS NEMP 2020 Industrial/ commercial (HIL D)																											
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																							
Primary Samples																											
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	N	-	11310	NAD	NAD	14.2	6.5	<0.30	78.7	27.9	109.6	<0.10	77.3	90.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP201_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal	N	-	-	-	-	17.3	7.7	<0.30	16.1	12.6	16.1	<0.10	5.4	17.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	N	-	10910	NAD	NAD	14.1	8.8	<0.30	56.3	59.6	94.4	<0.10	39.0	151.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	N	-	90800	-	-	11.9	13.4	<0.30	20.7	20.0	45.7	<0.10	11.4	45.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	N	-	11320	NAD	NAD	6.8	14.2	<0.30	63.8	28.9	146.8	<0.10	54.5	94.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	N	-	11220	-	-	10.4	9.2	<0.30	14.3	41.4	22.3	<0.10	30.9	100.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	N	-	11410	NAD	NAD	15.8	6.7	<0.30	53.2	29.9	55.9	<0.10	48.0	104.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP211_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: Silty CLAY	Normal	N	-	-	-	-	20.0	10.5	<0.30	23.0	25.1	25.1	<0.10	10.9	32.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	N	-	12100	NAD	NAD	8.4	<5.0	<0.30	22.3	35.3	60.2	<0.10	50.3	84.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP213_0.7-0.8	0.7-0.8	27 Mar 2023	NATURAL: CLAY	Normal	N	-	-	-	-	14.1	11.6	<0.30	15.7	21.7	18.0	<0.10	8.1	31.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	NATURAL:CLAY	Normal	N	-	11470	NAD	NAD	15.2	7.2	<0.30	13.3	43.3	26.7	<0.10	32.2	117.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP215_1.2-1.3	1.2-1.3	27 Mar 2023	FILL: Silty CLAY	Normal	N	-	11670	-	-	13.8	7.1	<0.30	21.5	44.7	31.2	<0.10	43.6	120.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	N	-	11120	-	-	13.0	10.9	<0.30	22.5	11.6	27.0	<0.10	10.3	19.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	N	-	10210	NAD	NAD	11.6	<5.0	<0.30	28.8	59.8	198.0	<0.10	74.4	190.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	N	-	10910	-	-	7.2	7.5	<0.30	30.0	63.9	119.0	<0.10	77.2	209.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	N	-	11470	-	-	15.4	<5.0	<0.30	50.2	141.8	271.2	<0.10	70.1	181.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	N	-	11200	-	-	15.6	6.9	<0.30	88.3	76.3	232.9	<0.10	74.5	184.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	N	-	12300	NAD	NAD	12.4	8.6	<0.30	44.2	74.2	79.1	<0.10	80.8	394.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	N	-	11310	-	-	24.7	6.0	<0.30	57.4	92.3	278.8	<0.10	128.8	389.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	N	-	11210	-	-	5.0	<5.0	<0.30	31.2	25.2	115.3	<0.10	29.5	80.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	N	-	10890	-	-	10.5	8.3	<0.30	3.5	17.0	42.6	<0.10	2.0	16.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP234_0.6-0.7	0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal	N	-	-	-	-	18.4	12.4	<0.30	34.1	24.0	128.6	<0.10	25.0	71.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	N	-	12120	NAD	NAD	11.8	<5.0	<0.30	53.9	50.6	93.0	<0.10	87.9	118.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP236_0.8-0.9	0.8-0.9	27 Mar 2023	NATURAL: CLAY	Normal	N	-	-	-	-	18.6	12.2	<0.30	17.1	31.2	22.1	<0.10	9.0	33.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	N	-	12300	NAD	NAD	7.2	7.0	<0.30	53.1	73.5	215.1	<0.10	102.6	254.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
QAQC Samples																											
DSI2.BR1	-	27 Mar 2023	-	Field_D	-	-	-	-	-	10.0	11.8	<0.30	41.8	23.7	42.8	<0.10	58.4	57.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DS12.SR1	-	27 Mar 2023	-	Interlab_D	-	-	-	-	-	11	7	<0.4	20	19	39	<0.1	10	38	<0.2	<0.5	<1	<2	<1	<1	<1	-	<25
DSI2.BR2	-	27 Mar 2023	-	Field_D	-	-	-	-	-	11.9	7.7	<0.30	20.8	25.1	62.5	<0.10	14.5	94.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-	<2.00	<25
DS12.SR2	-	28 Mar 2023	-	Interlab_D	-	-	-	-	-	11	7	<0.4	20	21	36	<0.1	9	32	<0.2	<0.5	<1	<2	<1	<1	<1	-	<25

Statistics

Number of Results	**25**	**0**	**25**	**10**	**10**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**2**	**27**	**29**
Number of Detects	**0**	**0**	**25**	**0**	**0**	**29**	**24**	**0**	**29**	**29**	**29**	**0**	**29**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration			**10210**			**5**	**<5**	**<0.3**	**3.5**	**11.6**	**16.1**	**<0.1**	**2**	**16.1**	**<0.2**	**<0.5**	**<1**	**<2**	**<1**	**<1**	**<1**	**<2**	**<25**
Maximum Concentration			**90800**			**24.7**	**14.2**	**<0.4**	**88.3**	**141.8**	**278.8**	**<0.1**	**128.8**	**394.7**	**<0.5**	**<0.5**	**<1**	**<2**	**<1**	**<2**	**<1**	**<2**	**<25**

Notes to Table

*NAD - No asbestos detected.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

Table A - Analytical Results Table_NEPM 2013 and NEMP 2020

ADE CONSULTING GROUP — SOLUTIONS THROUGH INNOVATION

					TPH				TRH							PAH											
					C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j+k)fluoranthene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene
					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					50	100	100	50	25	25	50	50	100	100	50	0.1	0.1	0.1	0.2	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																											
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand										260 | 370 | 630																	
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil										215	170	170	1,700	3,300							0.7						
NEPM 2013 Table 1B(5) Site-Specifc EIL - Comm/Ind																											
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									700		1,000		3,500	10,000													
PFAS NEMP 2020 Ecological direct exposure																											
PFAS NEMP 2020 Ecological indirect exposure																											
PFAS NEMP 2020 Industrial/ commercial (HIL D)																											
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																							
Primary Samples																											
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP201_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<50	<100	119	119	<35	<35	<50	-	<100	125	125	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	<0.30	<0.30
DSI2.TP211_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: Silty CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP213_0.7-0.8	0.7-0.8	27 Mar 2023	NATURAL: CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	NATURAL:CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP215_1.2-1.3	1.2-1.3	27 Mar 2023	FILL: Silty CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<50	100	<100	100	<35	<35	<50	-	126	<100	126	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	<50	111	<100	111	<35	<35	<50	-	132	<100	132	<0.30	<0.30	<0.30	0.58	0.43	0.59	0.67	0.43	<0.30	0.83	<0.30	0.64
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<50	113	<100	113	<35	<35	<50	-	113	<100	113	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<50	124	100	224	<35	<35	<50	-	169	138	307	<0.30	<0.30	<0.30	1.02	0.93	1.08	0.97	0.84	<0.30	1.69	<0.30	0.96
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP234_0.6-0.7	0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP236_0.8-0.9	0.8-0.9	27 Mar 2023	NATURAL: CLAY	Normal	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	<50	<100	159	159	<35	<35	<50	-	143	185	328	<0.30	<0.30	<0.30	1.43	1.56	1.53	1.34	1.37	<0.30	4.14	<0.30	1.16
QAQC Samples																											
DSI2.BR1	-	27 Mar 2023	-	Field_D	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Statistics

Number of Results	29	29	29	29	29	29	29	2	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
Number of Detects	0	4	3	6	0	0	0	0	5	3	6	0	0	0	3	3	3	3	3	0	4	0	3
Minimum Concentration	<50	100	100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration	<50	124	159	224	<35	<35	<50	<50	169	185	328	<0.3	<0.3	<0.3	1.43	1.56	1.53	1.34	1.37	<0.3	4.14	<0.3	1.16

Notes to Table

*NAD - No asbestos detected.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

Table A - Analytical Results Table_NEPM 2013 and NEMP 2020

ADECONSULTINGGROUP SOLUTIONS THROUGH INNOVATION

										Organochlorine Pesticides																	
					Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	PAHs (Sum of positives)	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)
					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	0.1	0.1	0.3	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil								40											3,600					100			
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																											
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																											
NEPM 2013 Table 1B(5) Site-Specifc EIL - Comm/Ind					370													640									
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																											
PFAS NEMP 2020 Ecological direct exposure																											
PFAS NEMP 2020 Ecological indirect exposure																											
PFAS NEMP 2020 Industrial/ commercial (HIL D)																											
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																							
Primary Samples																											
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP201_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP211_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: Silty CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP213_0.7-0.8	0.7-0.8	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	NATURAL:CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP215_1.2-1.3	1.2-1.3	27 Mar 2023	FILL: Silty CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	0.83	0.92	5.00	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	1.63	1.54	9.12	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP234_0.6-0.7	0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP236_0.8-0.9	0.8-0.9	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	<0.30	1.24	3.55	2.12	17.32	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
QAQC Samples																											
DSI2.BR1	-	27 Mar 2023	-	Field_D	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1

Statistics

Number of Results	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**29**	**2**	**29**	**29**	**29**	**29**	**29**	**29**	**27**	**29**
Number of Detects	**0**	**1**	**3**	**27**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.1**	**<0.1**	**<0.1**	**0.35**	**<0.05**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Maximum Concentration	**<0.3**	**1.24**	**3.55**	**2.12**	**17.32**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.2**	**<0.2**	**<0.1**	**<0.2**	**<0.1**	**<0.1**	**<0.1**

Notes to Table

*NAD - No asbestos detected.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

Table A - Analytical Results Table_NEPM 2013 and NEMP 2020

								Organophosphorous Pesticides														PCBs				
					Heptachlor	Heptachlor epoxide	Methoxychlor	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Ethoprop	Fenitrothion	Malathion	Methyl parathion	Parathion	Ronnel	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248
					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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil					50		2,500			2,000																	
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																											
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																											
NEPM 2013 Table 1B(5) Site-Specifc EIL - Comm/Ind																											
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																											
PFAS NEMP 2020 Ecological direct exposure																											
PFAS NEMP 2020 Ecological indirect exposure																											
PFAS NEMP 2020 Industrial/ commercial (HIL D)																											
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																							
Primary Samples																											
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP201_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP211_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: Silty CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP213_0.7-0.8	0.7-0.8	27 Mar 2023	NATURAL: CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	NATURAL:CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP215_1.2-1.3	1.2-1.3	27 Mar 2023	FILL: Silty CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP234_0.6-0.7	0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP236_0.8-0.9	0.8-0.9	27 Mar 2023	NATURAL: CLAY	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
QAQC Samples																											
DSI2.BR1	-	27 Mar 2023	-	Field_D	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	<0.10	<0.10	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50	<0.50	<0.50	<0.50
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Statistics

Number of Results	**29**	**29**	**29**	**2**	**2**	**29**	**29**	**27**	**29**	**2**	**2**	**2**	**27**	**2**	**2**	**27**	**2**	**29**	**29**	**29**	**29**	**29**	**29**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**
Maximum Concentration	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**

Notes to Table

*NAD - No asbestos detected.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

Table A - Analytical Results Table_NEPM 2013 and NEMP 2020

								Perfluoroalkane Sulfonic Acids					Perfluoroalkane Carboxylic Acids											Halogenated Benzenes
					Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)	Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Hexachlorobenzene
					mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EQL					0.1	0.1	0.1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	0.1
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil							7																	80
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																								
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																								
NEPM 2013 Table 1B(5) Site-Specifc EIL - Comm/Ind																								
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																								
PFAS NEMP 2020 Ecological direct exposure												1,000					10,000							
PFAS NEMP 2020 Ecological indirect exposure												10												
PFAS NEMP 2020 Industrial/ commercial (HIL D)										20,000		20,000					50,000							
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																				
Primary Samples																								
DSI2.TP201_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI2.TP201_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP203_0.1-0.2	**0.1-0.2**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI2.TP206_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP209_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**FILL: Gravelly Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP210_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP211_0.1-0.2	**0.1-0.2**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP211_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP213_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty Gravelly CLAY**	**Normal**	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI2.TP213_0.7-0.8	**0.7-0.8**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP215_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**NATURAL:CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP215_1.2-1.3	**1.2-1.3**	**27 Mar 2023**	**FILL: Silty CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP216_0.4-0.6	**0.4-0.6**	**27 Mar 2023**	**FILL: Gravelly SILT**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP219_0.2-0.3	**0.2-0.3**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP221_0.1-0.2	**0.1-0.2**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP225_0.4-0.5	**0.4-0.5**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP227_0.3-0.4	**0.3-0.4**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP229_0.2-0.3	**0.2-0.3**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP231_0.1-0.2	**0.1-0.2**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP233_0.4-0.5	**0.4-0.5**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP234_0.3-0.4	**0.3-0.4**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP234_0.6-0.7	**0.6-0.7**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP236_0.3-0.4	**0.3-0.4**	**27 Mar 2023**	**FILL: Clayey SAND**	**Normal**	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
DSI2.TP236_0.8-0.9	**0.8-0.9**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DSI2.TP239_0.2-0.3	**0.2-0.3**	**28 Mar 2023**	**FILL: Gravelly SAND**	**Normal**	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<0.10
QAQC Samples																								
DSI2.BR1	-	**27 Mar 2023**	-	**Field_D**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DS12.SR1	-	**27 Mar 2023**	-	**Interlab_D**	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
DSI2.BR2	-	**27 Mar 2023**	-	**Field_D**	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.10
DS12.SR2	-	**28 Mar 2023**	-	**Interlab_D**	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1

Statistics

Number of Results	**29**	**29**	**2**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**29**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.1**	**<0.1**	**<0.1**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**
Maximum Concentration	**<0.5**	**<0.5**	**<0.1**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<0.1**

Notes to Table

*NAD - No asbestos detected.

Environmental Standards

NEPM, NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil
HEPA, January 2020, PFAS NEMP 2020 Ecological direct exposure
HEPA, January 2020, PFAS NEMP 2020 Ecological indirect exposure
HEPA, January 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
2013, NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand
2013, NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
2013, NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil

Table B - Analytical Results Table_NSW EPA 2014

					Asbestos	Physical	Metals								BTEX						
					Asbestos (Presence/Absence)	Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Naphthalene (VOC)
					Y/N	%	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	4	0.3	1	1	1	0.1	1	1	0.2	0.5	1	2	1	1	1
NSW 2014 General Solid Waste CT1 (No Leaching)							100	20			100	4	40		10	288	600			1,000	
NSW 2014 General Solid Waste SCC1 (with leached)							500	100			1,500	50	1,050		18	518	1,080			1,800	
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)							400	80			400	16	160		40	1,152	2,400			4,000	
NSW 2014 Restricted Solid Waste SCC2 (with leached)							2,000	400			6,000	200	4,200		72	2,073	4,320			7,200	
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																	
Primary Samples																					
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	N	14.2	6.5	<0.30	78.7	27.9	109.6	<0.10	77.3	90.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	N	14.1	8.8	<0.30	56.3	59.6	94.4	<0.10	39.0	151.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	N	11.9	13.4	<0.30	20.7	20.0	45.7	<0.10	11.4	45.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	N	6.8	14.2	<0.30	63.8	28.9	146.8	<0.10	54.5	94.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	N	10.4	9.2	<0.30	14.3	41.4	22.3	<0.10	30.9	100.0	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	N	15.8	6.7	<0.30	53.2	29.9	55.9	<0.10	48.0	104.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	N	8.4	<5.0	<0.30	22.3	35.3	60.2	<0.10	50.3	84.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty CLAY	Normal	N	15.2	7.2	<0.30	13.3	43.3	26.7	<0.10	32.2	117.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	N	13.0	10.9	<0.30	22.5	11.6	27.0	<0.10	10.3	19.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	N	11.6	<5.0	<0.30	28.8	59.8	198.0	<0.10	74.4	190.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	N	7.2	7.5	<0.30	30.0	63.9	119.0	<0.10	77.2	209.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	N	15.4	<5.0	<0.30	50.2	141.8	271.2	<0.10	70.1	181.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	N	15.6	6.9	<0.30	88.3	76.3	232.9	<0.10	74.5	184.2	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	N	12.4	8.6	<0.30	44.2	74.2	79.1	<0.10	80.8	394.7	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	N	24.7	6.0	<0.30	57.4	92.3	278.8	<0.10	128.8	389.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	N	5.0	<5.0	<0.30	31.2	25.2	115.3	<0.10	29.5	80.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	N	10.5	8.3	<0.30	3.5	17.0	42.6	<0.10	2.0	16.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	N	11.8	<5.0	<0.30	53.9	50.6	93.0	<0.10	87.9	118.8	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	N	7.2	7.0	<0.30	53.1	73.5	215.1	<0.10	102.6	254.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
QAQC Samples																					
DSI2.BR1	-	27 Mar 2023	-	Field_D	-	10.0	11.8	<0.30	41.8	23.7	42.8	<0.10	58.4	57.1	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DS12.SR1	-	27 Mar 2023	-	Interlab_D	-	11	7	<0.4	20	19	39	<0.1	10	38	<0.2	<0.5	<1	<2	<1	<1	<1
DSI2.BR2	-	27 Mar 2023	-	Field_D	-	11.9	7.7	<0.30	20.8	25.1	62.5	<0.10	14.5	94.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	-
DS12.SR2	-	28 Mar 2023	-	Interlab_D	-	11	7	<0.4	20	21	36	<0.1	9	32	<0.2	<0.5	<1	<2	<1	<1	<1

Statistics

Number of Results	**19**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**2**
Number of Detects	**0**	**23**	**18**	**0**	**23**	**23**	**23**	**0**	**23**	**23**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration		**5**	**<5**	**<0.3**	**3.5**	**11.6**	**22.3**	**<0.1**	**2**	**16.1**	**<0.2**	**<0.5**	**<1**	**<2**	**<1**	**<1**	**<1**
Maximum Concentration		**24.7**	**14.2**	**<0.4**	**88.3**	**141.8**	**278.8**	**<0.1**	**128.8**	**394.7**	**<0.5**	**<0.5**	**<1**	**<2**	**<1**	**<2**	**<1**
Standard Deviation							**83.61**		**33.42**								
95% Student's-t UCL							**150.8**		**70.65**								

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table B - Analytical Results Table_NSW EPA 2014

Field ID	Depth (m BGL)	Date	Matrix Description	Sample Type		TPH					TRH										
					Total BTEX	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j+k)fluoranthene
					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					2	25	50	100	100	50	25	25	50	50	100	100	50	0.1	0.1	0.1	0.2
NSW 2014 General Solid Waste CT1 (No Leaching)						650				10,000											
NSW 2014 General Solid Waste SCC1 (with leached)						650				10,000											
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)						2,600				40,000											
NSW 2014 Restricted Solid Waste SCC2 (with leached)						2,600				40,000											
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Primary Samples																					
DSI2.TP201_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP203_0.1-0.2	**0.1-0.2**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	119	119	<35	<35	<50	-	<100	125	125	<0.30	<0.30	<0.30	<0.30
DSI2.TP206_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP209_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**FILL: Gravelly Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP210_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP211_0.1-0.2	**0.1-0.2**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP213_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty Gravelly CLAY**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP215_0.2-0.3	**0.2-0.3**	**27 Mar 2023**	**FILL: Silty CLAY**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP216_0.4-0.6	**0.4-0.6**	**27 Mar 2023**	**FILL: Gravelly SILT**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP219_0.2-0.3	**0.2-0.3**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP221_0.1-0.2	**0.1-0.2**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	100	<100	100	<35	<35	<50	-	126	<100	126	<0.30	<0.30	<0.30	<0.30
DSI2.TP225_0.4-0.5	**0.4-0.5**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP227_0.3-0.4	**0.3-0.4**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	111	<100	111	<35	<35	<50	-	132	<100	132	<0.30	<0.30	<0.30	0.58
DSI2.TP229_0.2-0.3	**0.2-0.3**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	113	<100	113	<35	<35	<50	-	113	<100	113	<0.30	<0.30	<0.30	<0.30
DSI2.TP231_0.1-0.2	**0.1-0.2**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	124	100	224	<35	<35	<50	-	169	138	307	<0.30	<0.30	<0.30	1.02
DSI2.TP233_0.4-0.5	**0.4-0.5**	**28 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP234_0.3-0.4	**0.3-0.4**	**27 Mar 2023**	**FILL: Silty SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP236_0.3-0.4	**0.3-0.4**	**27 Mar 2023**	**FILL: Clayey SAND**	**Normal**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DSI2.TP239_0.2-0.3	**0.2-0.3**	**28 Mar 2023**	**FILL: Gravelly SAND**	**Normal**	<2.00	<25	<50	<100	159	159	<35	<35	<50	-	143	185	328	<0.30	<0.30	<0.30	1.43
QAQC Samples																					
DSI2.BR1	-	**27 Mar 2023**	-	**Field_D**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DS12.SR1	-	**27 Mar 2023**	-	**Interlab_D**	-	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2
DSI2.BR2	-	**27 Mar 2023**	-	**Field_D**	<2.00	<25	<50	<100	<100	<100	<35	<35	<50	-	<100	<100	<100	<0.30	<0.30	<0.30	<0.30
DS12.SR2	-	**28 Mar 2023**	-	**Interlab_D**	-	<25	<50	<100	<100	<50	<25	<25	<50	<50	<100	<100	<50	<0.1	<0.1	<0.1	<0.2

Statistics

Statistics	Total BTEX	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j+k)fluoranthene
Number of Results	**21**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**23**	**2**	**23**	**23**	**23**	**23**	**23**	**23**	**23**
Number of Detects	**0**	**0**	**0**	**4**	**3**	**6**	**0**	**0**	**0**	**0**	**5**	**3**	**6**	**0**	**0**	**0**	**3**
Minimum Concentration	**<2**	**<25**	**<50**	**100**	**100**	**<50**	**<25**	**<25**	**<50**	**<50**	**<100**	**<100**	**<50**	**<0.1**	**<0.1**	**<0.1**	**<0.2**
Maximum Concentration	**<2**	**<25**	**<50**	**124**	**159**	**224**	**<35**	**<35**	**<50**	**<50**	**169**	**185**	**328**	**<0.3**	**<0.3**	**<0.3**	**1.43**
Standard Deviation																	
95% Student's-t UCL																	

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table B - Analytical Results Table_NSW EPA 2014

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SOLUTIONS THROUGH INNOVATION

					PAH																
					Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	PAHs (Sum of positives)	4,4-DDE	a-BHC	Aldrin	b-BHC
					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	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.05	0.1	0.1	0.1	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)						0.8															
NSW 2014 General Solid Waste SCC1 (with leached)						10															
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)						3.2															
NSW 2014 Restricted Solid Waste SCC2 (with leached)						23															
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																	
Primary Samples																					
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	0.43	0.59	0.67	0.43	<0.30	0.83	<0.30	0.64	<0.30	<0.30	0.83	0.92	5.00	<0.10	<0.10	<0.10	<0.10
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	0.93	1.08	0.97	0.84	<0.30	1.69	<0.30	0.96	<0.30	<0.30	1.63	1.54	9.12	<0.10	<0.10	<0.10	<0.10
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	1.56	1.53	1.34	1.37	<0.30	4.14	<0.30	1.16	<0.30	1.24	3.55	2.12	17.32	<0.10	<0.10	<0.10	<0.10
QAQC Samples																					
DSI2.BR1	-	27 Mar 2023	-	Field_D	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30	<0.10	<0.10	<0.10	<0.10
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.05	<0.1	<0.1	<0.1	<0.1
Statistics																					
Number of Results					23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
Number of Detects					3	3	3	3	0	4	0	3	0	1	3	21	4	0	0	0	0
Minimum Concentration					<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.35	<0.05	<0.1	<0.1	<0.1	<0.1
Maximum Concentration					1.56	1.53	1.34	1.37	<0.3	4.14	<0.3	1.16	<0.3	1.24	3.55	2.12	17.32	<0.1	<0.1	<0.1	<0.1
Standard Deviation						0.335															
95% Student's-t UCL						0.565															

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table B - Analytical Results Table_NSW EPA 2014

					Organochlorine Pesticides																
					Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
					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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)																					
NSW 2014 General Solid Waste SCC1 (with leached)																					
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)																					
NSW 2014 Restricted Solid Waste SCC2 (with leached)																					
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																	
Primary Samples																					
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty CLAY	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
QAQC Samples																					
DSI2.BR1	-	27 Mar 2023	-	Field_D	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	<0.10	<0.10	<0.10	<0.10	<0.10	-	<0.10	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1

Statistics

Number of Results	23	23	23	23	23	2	23	23	23	23	23	23	21	23	23	23	23
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Standard Deviation																	
95% Student's-t UCL																	

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table B - Analytical Results Table_NSW EPA 2014

ADECONSULTINGGROUP
SOLUTIONS THROUGH INNOVATION

					Organophosphorous Pesticides																
					Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Ethoprop	Fenitrothion	Malathion	Methyl parathion	Parathion	Ronnel	Arochlor 1016	Arochlor 1221
					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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)							4														
NSW 2014 General Solid Waste SCC1 (with leached)							7.5														
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)							16														
NSW 2014 Restricted Solid Waste SCC2 (with leached)							30														
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																	
Primary Samples																					
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty CLAY	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
QAQC Samples																					
DSI2.BR1	-	27 Mar 2023	-	Field_D	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	-	-	<0.10	<0.10	<0.10	<0.10	-	-	-	<0.10	-	-	<0.10	-	<0.10	<0.50	<0.50
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1

Statistics

Statistic	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Dichlorvos	Dimethoate	Ethion	Ethoprop	Fenitrothion	Malathion	Methyl parathion	Parathion	Ronnel	Arochlor 1016	Arochlor 1221
Number of Results	2	2	23	23	21	23	2	2	2	21	2	2	21	2	23	23	23
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5
Standard Deviation																	
95% Student's-t UCL																	

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table B - Analytical Results Table_NSW EPA 2014

					PCBs						Perfluoroalkane Sulfonic Acids					Perfluoroalkane Carbox					
					Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)	Perfluorobutane sulfonic acid (PFBS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorooctane sulfonic acid (PFOS)	Perfluorobutanoic acid (PFBA)	Perfluoropentanoic acid (PFPeA)	Perfluorohexanoic acid (PFHxA)	Perfluoroheptanoic acid (PFHpA)	Perfluorooctanoic acid (PFOA)	Perfluorononanoic acid (PFNA)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
EQL					0.1	0.1	0.1	0.1	0.1	0.1	5	5	5	5	5	5	5	5	5	5	5
NSW 2014 General Solid Waste CT1 (No Leaching)										50											
NSW 2014 General Solid Waste SCC1 (with leached)										50											
NSW 2014 General Solid Waste TCLP1 (leached)																					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)										50											
NSW 2014 Restricted Solid Waste SCC2 (with leached)										50											
NSW 2014 Restricted Solid Waste TCLP2 (leached)																					
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																	
Primary Samples																					
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
QAQC Samples																					
DSI2.BR1	-	27 Mar 2023	-	Field_D	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DS12.SR1	-	27 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-
DSI2.BR2	-	27 Mar 2023	-	Field_D	<0.50	<0.50	<0.50	<0.50	<0.50	-	-	-	-	-	-	-	-	-	-	-	-
DS12.SR2	-	28 Mar 2023	-	Interlab_D	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-

Statistics

Number of Results	**23**	**23**	**23**	**23**	**23**	**2**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**	**5**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**
Maximum Concentration	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**	**<5**
Standard Deviation																	
95% Student's-t UCL																	

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table B - Analytical Results Table_NSW EPA 2014

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					ylic Acids					Halogenated Benzenes
					Perfluorodecanoic acid (PFDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorododecanoic acid (PFDoDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluorotetradecanoic acid (PFTeDA)	Hexachlorobenzene
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EQL					5	5	5	5	5	0.1
NSW 2014 General Solid Waste CT1 (No Leaching)										
NSW 2014 General Solid Waste SCC1 (with leached)										
NSW 2014 General Solid Waste TCLP1 (leached)										
NSW 2014 Restricted Solid Waste CT2 (No Leaching)										
NSW 2014 Restricted Solid Waste SCC2 (with leached)										
NSW 2014 Restricted Solid Waste TCLP2 (leached)										
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**						
Primary Samples										
DSI2.TP201_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	<5	<5	<5	<5	<5	<0.10
DSI2.TP203_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	<5	<5	<5	<5	<5	<0.10
DSI2.TP206_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP209_0.5-0.6	0.5-0.6	27 Mar 2023	FILL: Gravelly Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP210_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP211_0.1-0.2	0.1-0.2	27 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP213_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty Gravelly CLAY	Normal	<5	<5	<5	<5	<5	<0.10
DSI2.TP215_0.2-0.3	0.2-0.3	27 Mar 2023	FILL: Silty CLAY	Normal	-	-	-	-	-	<0.10
DSI2.TP216_0.4-0.6	0.4-0.6	27 Mar 2023	FILL: Gravelly SILT	Normal	-	-	-	-	-	<0.10
DSI2.TP219_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP221_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP225_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP227_0.3-0.4	0.3-0.4	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP229_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP231_0.1-0.2	0.1-0.2	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP233_0.4-0.5	0.4-0.5	28 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP234_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Silty SAND	Normal	-	-	-	-	-	<0.10
DSI2.TP236_0.3-0.4	0.3-0.4	27 Mar 2023	FILL: Clayey SAND	Normal	<5	<5	<5	<5	<5	<0.10
DSI2.TP239_0.2-0.3	0.2-0.3	28 Mar 2023	FILL: Gravelly SAND	Normal	<5	<5	<5	<5	<5	<0.10
QAQC Samples										
DSI2.BR1	-	27 Mar 2023	-	Field_D	-	-	-	-	-	<0.10
DS12.SR1	-	27 Mar 2023	-	Interlab_D	-	-	-	-	-	<0.1
DSI2.BR2	-	27 Mar 2023	-	Field_D	-	-	-	-	-	<0.10
DS12.SR2	-	28 Mar 2023	-	Interlab_D	-	-	-	-	-	<0.1

Statistics

Number of Results	5	5	5	5	5	23
Number of Detects	0	0	0	0	0	0
Minimum Concentration	<5	<5	<5	<5	<5	<0.1
Maximum Concentration	<5	<5	<5	<5	<5	<0.1
Standard Deviation						
95% Student's-t UCL						

Environmental Standards

NSW EPA, November 2014, NSW 2014 General Solid Waste CT1 (No Leaching)
NSW EPA, November 2014, NSW 2014 General Solid Waste SCC1 (with leached)
NSW EPA, November 2014, NSW 2014 General Solid Waste TCLP1 (leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste CT2 (No Leaching)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste SCC2 (with leached)
NSW EPA, November 2014, NSW 2014 Restricted Solid Waste TCLP2 (leached)

Table C - Analytical Results Table_ Geological Background Ranges

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					Physical	Metals								BTEX								
					Moisture Content	Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C9 Fraction	C10-C14 Fraction
					%	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						5	0.3	1	5	5	0.1	1	5	0.5	0.5	1	2	1	2	2	25	50
ANZECC (1992) Background Ranges (VENM)						30	2		190	200	0.1	400	180	0	0	0			0		0	
Berkman (1989) Background Ranges (VENM)						50	1		100	200	0.03	500	300	0	0	0			0		0	
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																		
DSI2.TP201_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	17.3	7.7	<0.30	16.1	12.6	16.1	<0.10	5.4	17.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50
DSI2.TP211_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	20.0	10.5	<0.30	23.0	25.1	25.1	<0.10	10.9	32.3	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50
DSI2.TP213_0.7-0.8	**0.7-0.8**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	14.1	11.6	<0.30	15.7	21.7	18.0	<0.10	8.1	31.5	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50
DSI2.TP215_1.2-1.3	**1.2-1.3**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	13.8	7.1	<0.30	21.5	44.7	31.2	<0.10	43.6	120.6	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50
DSI2.TP234_0.6-0.7	**0.6-0.7**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	18.4	12.4	<0.30	34.1	24.0	128.6	<0.10	25.0	71.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50
DSI2.TP236_0.8-0.9	**0.8-0.9**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	18.6	12.2	<0.30	17.1	31.2	22.1	<0.10	9.0	33.4	<0.50	<0.50	<1.0	<2.0	<1.0	<2.0	<2.00	<25	<50
Statistics																						
Number of Results					**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Number of Detects					**6**	**6**	**0**	**6**	**6**	**6**	**0**	**6**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration					**13.8**	**7.1**	**<0.3**	**15.7**	**12.6**	**16.1**	**<0.1**	**5.4**	**17.5**	**<0.5**	**<0.5**	**<1**	**<2**	**<1**	**<2**	**<2**	**<25**	**<50**
Maximum Concentration					**20**	**12.4**	**<0.3**	**34.1**	**44.7**	**128.6**	**<0.1**	**43.6**	**120.6**	**<0.5**	**<0.5**	**<1**	**<2**	**<1**	**<2**	**<2**	**<25**	**<50**

Table C - Analytical Results Table_ Geological Background Ranges

					TPH			TRH						PAH								
					C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(b+j+k)fluoranthene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene
					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					100	100	100	35	35	50	100	100	100	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
ANZECC (1992) Background Ranges (VENM)										0	0	0							0			
Berkman (1989) Background Ranges (VENM)										0	0	0							0			
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																		
DSI2.TP201_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<100	<100	<100	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP211_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	<100	<100	<100	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP213_0.7-0.8	**0.7-0.8**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<100	<100	<100	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP215_1.2-1.3	**1.2-1.3**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	<100	<100	<100	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP234_0.6-0.7	**0.6-0.7**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<100	<100	<100	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
DSI2.TP236_0.8-0.9	**0.8-0.9**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<100	<100	<100	<35	<35	<50	<100	<100	<100	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Statistics																						
Number of Results					**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Number of Detects					**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration					**<100**	**<100**	**<100**	**<35**	**<35**	**<50**	**<100**	**<100**	**<100**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**
Maximum Concentration					**<100**	**<100**	**<100**	**<35**	**<35**	**<50**	**<100**	**<100**	**<100**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**	**<0.3**

Table C - Analytical Results Table_ Geological Background Ranges

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					Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	PAHs (Sum of positives)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
ANZECC (1992) Background Ranges (VENM)												
Berkman (1989) Background Ranges (VENM)												
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**								
DSI2.TP201_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI2.TP211_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: Silty CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI2.TP213_0.7-0.8	0.7-0.8	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI2.TP215_1.2-1.3	1.2-1.3	27 Mar 2023	NATURAL: Silty CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI2.TP234_0.6-0.7	0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
DSI2.TP236_0.8-0.9	0.8-0.9	27 Mar 2023	NATURAL: CLAY	Normal	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.35	<0.30
Statistics												
Number of Results					6	6	6	6	6	6	6	6
Number of Detects					0	0	0	0	0	0	6	0
Minimum Concentration					<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.35	<0.3
Maximum Concentration					<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	0.35	<0.3

										Organochlori
	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ANZECC (1992) Background Ranges (VENM)										
Berkman (1989) Background Ranges (VENM)										
DSI2.TP201_0.5-0.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP211_0.5-0.6	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP213_0.7-0.8	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP215_1.2-1.3	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP234_0.6-0.7	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
DSI2.TP236_0.8-0.9	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Number of Results	6	6	6	6	6	6	6	6	6	6
Number of Detects	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table C - Analytical Results Table_ Geological Background Ranges

					ne Pesticides										Organophosphorous Pesticides							
					Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Chlorpyrifos	Chlorpyrifos-methyl	Tribuphos	Diazinon	Ethoprop	Methyl parathion	Ronnel	Arochlor 1016
					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					0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5
ANZECC (1992) Background Ranges (VENM)																						
Berkman (1989) Background Ranges (VENM)																						
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**																		
DSI2.TP201_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
DSI2.TP211_0.5-0.6	**0.5-0.6**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
DSI2.TP213_0.7-0.8	**0.7-0.8**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
DSI2.TP215_1.2-1.3	**1.2-1.3**	**27 Mar 2023**	**NATURAL: Silty CLAY**	**Normal**	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
DSI2.TP234_0.6-0.7	**0.6-0.7**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50
DSI2.TP236_0.8-0.9	**0.8-0.9**	**27 Mar 2023**	**NATURAL: CLAY**	**Normal**	<0.20	<0.20	<0.10	<0.20	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50

Statistics

Number of Results	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Number of Detects	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Minimum Concentration	**<0.2**	**<0.2**	**<0.1**	**<0.2**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.5**
Maximum Concentration	**<0.2**	**<0.2**	**<0.1**	**<0.2**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.1**	**<0.5**

Table C - Analytical Results Table_ Geological Background Ranges

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					PCBs						Halogenated Benzenes
					Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Hexachlorobenzene
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.5	0.5	0.5	0.5	0.5	0.5	0.1
ANZECC (1992) Background Ranges (VENM)											
Berkman (1989) Background Ranges (VENM)											
Field ID	**Depth (m BGL)**	**Date**	**Matrix Description**	**Sample Type**							
DSI2.TP201_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10
DSI2.TP211_0.5-0.6	0.5-0.6	27 Mar 2023	NATURAL: Silty CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10
DSI2.TP213_0.7-0.8	0.7-0.8	27 Mar 2023	NATURAL: CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10
DSI2.TP215_1.2-1.3	1.2-1.3	27 Mar 2023	NATURAL: Silty CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10
DSI2.TP234_0.6-0.7	0.6-0.7	27 Mar 2023	NATURAL: CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10
DSI2.TP236_0.8-0.9	0.8-0.9	27 Mar 2023	NATURAL: CLAY	Normal	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.10

Statistics

Number of Results	6	6	6	6	6	6	6
Number of Detects	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.112/04/2023 10:49:50 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Pb- 95% UCL

General Statistics

Total Number of Observations	19	Number of Distinct Observations	19
		Number of Missing Observations	0
Minimum	22.3	Mean	117.6
Maximum	278.8	Median	94.4
SD	83.61	Std. Error of Mean	19.18
Coefficient of Variation	0.711	Skewness	0.762

Normal GOF Test

Shapiro Wilk Test Statistic	0.894	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.177	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.197	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	150.8	95% Adjusted-CLT UCL (Chen-1995)	152.7
		95% Modified-t UCL (Johnson-1978)	151.4

Gamma GOF Test

A-D Test Statistic	0.291	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.752	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.112	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.201	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.983	k star (bias corrected MLE)	1.705
Theta hat (MLE)	59.29	Theta star (bias corrected MLE)	68.96
nu hat (MLE)	75.35	nu star (bias corrected)	64.78
MLE Mean (bias corrected)	117.6	MLE Sd (bias corrected)	90.04
		Approximate Chi Square Value (0.05)	47.26
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	45.96

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	161.1	95% Adjusted Gamma UCL (use when n<50)	165.7

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.949	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.103	**Lilliefors Lognormal GOF Test**

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.197					Data appear Lognormal at 5% Significance Level	
56	**Data appear Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	3.105					Mean of logged Data	4.494
60					Maximum of Logged Data	5.63					SD of logged Data	0.799
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	191.4					90% Chebyshev (MVUE) UCL	192.3
64					95% Chebyshev (MVUE) UCL	224.7					97.5% Chebyshev (MVUE) UCL	269.8
65					99% Chebyshev (MVUE) UCL	358.3						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	149.1					95% Jackknife UCL	150.8
72					95% Standard Bootstrap UCL	149					95% Bootstrap-t UCL	154.4
73					95% Hall's Bootstrap UCL	151					95% Percentile Bootstrap UCL	150.1
74					95% BCA Bootstrap UCL	153.4						
75					90% Chebyshev(Mean, Sd) UCL	175.1					95% Chebyshev(Mean, Sd) UCL	201.2
76					97.5% Chebyshev(Mean, Sd) UCL	237.4					99% Chebyshev(Mean, Sd) UCL	308.4
77												
78	**Suggested UCL to Use**											
79					95% Student's-t UCL	150.8						
80												
81	When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test											
82	When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL											
83												
84	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
85	Recommendations are based upon data size, data distribution, and skewness.											
86	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
87	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
88												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.112/04/2023 10:55:02 AM
From File	WorkSheet_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Ni- 95% UCL

General Statistics			
Total Number of Observations	19	Number of Distinct Observations	19
		Number of Missing Observations	0
Minimum	2	Mean	57.36
Maximum	128.8	Median	58.4
SD	33.42	Std. Error of Mean	7.667
Coefficient of Variation	0.583	Skewness	0.154
Normal GOF Test			
Shapiro Wilk Test Statistic	0.97	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.901	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.197	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	70.65	95% Adjusted-CLT UCL (Chen-1995)	70.26
		95% Modified-t UCL (Johnson-1978)	70.7
Gamma GOF Test			
A-D Test Statistic	0.732	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.754	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.174	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.201	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	1.825	k star (bias corrected MLE)	1.572
Theta hat (MLE)	31.43	Theta star (bias corrected MLE)	36.49
nu hat (MLE)	69.34	nu star (bias corrected)	59.73
MLE Mean (bias corrected)	57.36	MLE Sd (bias corrected)	45.75
		Approximate Chi Square Value (0.05)	42.95
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	41.71
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	79.75	95% Adjusted Gamma UCL (use when n<50)	82.13
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.901	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.2	**Lilliefors Lognormal GOF Test**	

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.197		Data Not Lognormal at 5% Significance Level				
56						**Data Not Lognormal at 5% Significance Level**						
57												
58						**Lognormal Statistics**						
59					Minimum of Logged Data	0.693					Mean of logged Data	3.751
60					Maximum of Logged Data	4.858					SD of logged Data	1.003
61												
62						**Assuming Lognormal Distribution**						
63					95% H-UCL	130.7					90% Chebyshev (MVUE) UCL	120.1
64					95% Chebyshev (MVUE) UCL	143.7					97.5% Chebyshev (MVUE) UCL	176.5
65					99% Chebyshev (MVUE) UCL	241						
66												
67						**Nonparametric Distribution Free UCL Statistics**						
68						**Data appear to follow a Discernible Distribution at 5% Significance Level**						
69												
70						**Nonparametric Distribution Free UCLs**						
71					95% CLT UCL	69.97					95% Jackknife UCL	70.65
72					95% Standard Bootstrap UCL	69.72					95% Bootstrap-t UCL	70.82
73					95% Hall's Bootstrap UCL	70.53					95% Percentile Bootstrap UCL	69.33
74					95% BCA Bootstrap UCL	69.77						
75					90% Chebyshev(Mean, Sd) UCL	80.36					95% Chebyshev(Mean, Sd) UCL	90.78
76					97.5% Chebyshev(Mean, Sd) UCL	105.2					99% Chebyshev(Mean, Sd) UCL	133.6
77												
78						**Suggested UCL to Use**						
79					95% Student's-t UCL	70.65						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.114/04/2023 8:52:00 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

UCL_BAP

General Statistics

Total Number of Observations	19	Number of Distinct Observations	4
		Number of Missing Observations	0
Minimum	0.3	Mean	0.421
Maximum	1.53	Median	0.3
SD	0.327	Std. Error of Mean	0.0751
Coefficient of Variation	0.777	Skewness	2.883

Normal GOF Test

Shapiro Wilk Test Statistic	0.437	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.486	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.197	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.551	95% Adjusted-CLT UCL (Chen-1995)	0.598
		95% Modified-t UCL (Johnson-1978)	0.559

Gamma GOF Test

A-D Test Statistic	5.16	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.747	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.503	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.2	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.486	k star (bias corrected MLE)	2.971
Theta hat (MLE)	0.121	Theta star (bias corrected MLE)	0.142
nu hat (MLE)	132.5	nu star (bias corrected)	112.9
MLE Mean (bias corrected)	0.421	MLE Sd (bias corrected)	0.244
		Approximate Chi Square Value (0.05)	89.37
Adjusted Level of Significance	0.0369	Adjusted Chi Square Value	87.54

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.532	95% Adjusted Gamma UCL (use when n<50)	0.543

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.461	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.901	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.496	**Lilliefors Lognormal GOF Test**

	A	B	C	D	E	F	G	H	I	J	K	L
55					5% Lilliefors Critical Value	0.197	Data Not Lognormal at 5% Significance Level					
56	**Data Not Lognormal at 5% Significance Level**											
57												
58	**Lognormal Statistics**											
59					Minimum of Logged Data	-1.204					Mean of logged Data	-1.015
60					Maximum of Logged Data	0.425					SD of logged Data	0.476
61												
62	**Assuming Lognormal Distribution**											
63					95% H-UCL	0.507					90% Chebyshev (MVUE) UCL	0.539
64					95% Chebyshev (MVUE) UCL	0.601					97.5% Chebyshev (MVUE) UCL	0.687
65					99% Chebyshev (MVUE) UCL	0.855						
66												
67	**Nonparametric Distribution Free UCL Statistics**											
68	**Data do not follow a Discernible Distribution (0.05)**											
69												
70	**Nonparametric Distribution Free UCLs**											
71					95% CLT UCL	0.545					95% Jackknife UCL	0.551
72					95% Standard Bootstrap UCL	N/A					95% Bootstrap-t UCL	N/A
73					95% Hall's Bootstrap UCL	N/A					95% Percentile Bootstrap UCL	N/A
74					95% BCA Bootstrap UCL	N/A						
75					90% Chebyshev(Mean, Sd) UCL	0.646					95% Chebyshev(Mean, Sd) UCL	0.748
76					97.5% Chebyshev(Mean, Sd) UCL	0.89					99% Chebyshev(Mean, Sd) UCL	1.168
77												
78	**Suggested UCL to Use**											
79					95% Student's-t UCL	0.551					or 95% Modified-t UCL	0.559
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

Appendix V – QA/QC Output

Relative Percent Difference Table

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Lab Report Number			A101023.0120.00 (053-069)	A101023.0120.00 (053-069)		A101023.0120.00 (053-069)	319690		A101023.0120.00 (070-079)	A101023.0120.00 (053-069)		A101023.0120.00 (070-079)	319690	
Field ID			DSI2.TP213_0.2-0.3	DSI2.BR1		DSI2.TP213_0.2-0.3	DS12.SR1		DSI2.TP233_0.4-0.5	DSI2.BR2		DSI2.TP233_0.4-0.5	DS12.SR2	
Date			27 Mar 2023	27 Mar 2023		27 Mar 2023	27 Mar 2023		28 Mar 2023	27 Mar 2023		28 Mar 2023	28 Mar 2023	
Matrix Type			Soil	Soil	RPD	Soil	Soil	RPD	Soil	Soil	RPD	Soil	Soil	RPD
	Unit	EQL												
Physical														
Moisture Content	%	0.1	8.4	10.0	17	8.4	11	27	5.0	11.9	82	5.0	11	75
Metals														
Arsenic	mg/kg	4	<5.0	11.8	81	<5.0	7	33	<5.0	7.7	43	<5.0	7	33
Cadmium	mg/kg	0.3	<0.30	<0.30	0	<0.30	<0.4	0	<0.30	<0.30	0	<0.30	<0.4	0
Chromium (III+VI)	mg/kg	1	22.3	41.8	61	22.3	20	11	31.2	20.8	40	31.2	20	44
Copper	mg/kg	1	35.3	23.7	39	35.3	19	60	25.2	25.1	0	25.2	21	18
Lead	mg/kg	1	60.2	42.8	34	60.2	39	43	115.3	62.5	59	115.3	36	105
Mercury	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Nickel	mg/kg	1	50.3	58.4	15	50.3	10	134	29.5	14.5	68	29.5	9	106
Zinc	mg/kg	1	84.5	57.1	39	84.5	38	76	80.5	94.4	16	80.5	32	86
BTEX														
Benzene	mg/kg	0.2	<0.50	<0.50	0	<0.50	<0.2	0	<0.50	<0.50	0	<0.50	<0.2	0
Toluene	mg/kg	0.5	<0.50	<0.50	0	<0.50	<0.5	0	<0.50	<0.50	0	<0.50	<0.5	0
Ethylbenzene	mg/kg	1	<1.0	<1.0	0	<1.0	<1	0	<1.0	<1.0	0	<1.0	<1	0
Xylene (m & p)	mg/kg	2	<2.0	<2.0	0	<2.0	<2	0	<2.0	<2.0	0	<2.0	<2	0
Xylene (o)	mg/kg	1	<1.0	<1.0	0	<1.0	<1	0	<1.0	<1.0	0	<1.0	<1	0
Xylene Total	mg/kg	1	<2.0	<2.0	0	<2.0	<1	0	<2.0	<2.0	0	<2.0	<1	0
Naphthalene (VOC)	mg/kg	1					<1						<1	
Total BTEX	mg/kg	2	<2.00	<2.00	0	<2.00			<2.00	<2.00	0	<2.00		
TPH														
C6-C9 Fraction	mg/kg	25	<25	<25	0	<25	<25	0	<25	<25	0	<25	<25	0
C10-C14 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
C15-C28 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
C29-C36 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
C10-C36 Fraction (Sum)	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0
TRH														
C6-C10 Fraction (F1)	mg/kg	25	<35	<35	0	<35	<25	0	<35	<35	0	<35	<25	0
C6-C10 (F1 minus BTEX)	mg/kg	25	<35	<35	0	<35	<25	0	<35	<35	0	<35	<25	0
>C10-C16 Fraction (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg	50					<50						<50	
>C16-C34 Fraction (F3)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
>C34-C40 Fraction (F4)	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
>C10-C40 Fraction (Sum)	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0
PAH														
Acenaphthene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Acenaphthylene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Anthracene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Benzo(b+j+k)fluoranthene	mg/kg	0.2	<0.30	<0.30	0	<0.30	<0.2	0	<0.30	<0.30	0	<0.30	<0.2	0
Benz(a)anthracene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Benzo(a) pyrene	mg/kg	0.05	<0.30	<0.30	0	<0.30	<0.05	0	<0.30	<0.30	0	<0.30	<0.05	0
Benzo(g,h,i)perylene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Chrysene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Dibenz(a,h)anthracene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Fluoranthene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Fluorene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Naphthalene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Phenanthrene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
Pyrene	mg/kg	0.1	<0.30	<0.30	0	<0.30	<0.1	0	<0.30	<0.30	0	<0.30	<0.1	0
PAHs (Sum of positives)	mg/kg	0.05	<0.30	<0.30	0	<0.30	<0.05	0	<0.30	<0.30	0	<0.30	<0.05	0
Organochlorine Pesticides														
4,4-DDE	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
a-BHC	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Aldrin	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
b-BHC	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Chlordane (cis)	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Chlordane (trans)	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
d-BHC	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
DDD	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
DDT	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
DDT+DDE+DDD	mg/kg	0.1					<0.1						<0.1	
Dieldrin	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Endosulfan I	mg/kg	0.1	<0.20	<0.20	0	<0.20	<0.1	0	<0.20	<0.20	0	<0.20	<0.1	0
Endosulfan II	mg/kg	0.1	<0.20	<0.20	0	<0.20	<0.1	0	<0.20	<0.20	0	<0.20	<0.1	0
Endosulfan sulphate	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Endrin	mg/kg	0.1	<0.20	<0.20	0	<0.20	<0.1	0	<0.20	<0.20	0	<0.20	<0.1	0
Endrin aldehyde	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Endrin ketone	mg/kg	0.1	<0.10	<0.10	0	<0.10			<0.10	<0.10	0	<0.10		
g-BHC (Lindane)	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Heptachlor	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Methoxychlor	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Organophosphorous Pesticides														
Azinophos methyl	mg/kg	0.1					<0.1						<0.1	
Bromophos-ethyl	mg/kg	0.1					<0.1						<0.1	
Chlorpyrifos	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Chlorpyrifos-methyl	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Tribuphos	mg/kg	0.1	<0.10	<0.10	0	<0.10			<0.10	<0.10	0	<0.10		
Diazinon	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
Dichlorvos	mg/kg	0.1					<0.1						<0.1	
Dimethoate	mg/kg	0.1					<0.1						<0.1	
Ethion	mg/kg	0.1					<0.1						<0.1	
Ethoprop	mg/kg	0.1	<0.10	<0.10	0	<0.10			<0.10	<0.10	0	<0.10		
Fenitrothion	mg/kg	0.1					<0.1						<0.1	
Malathion	mg/kg	0.1					<0.1						<0.1	
Methyl parathion	mg/kg	0.1	<0.10	<0.10	0	<0.10			<0.10	<0.10	0	<0.10		
Parathion	mg/kg	0.1					<0.1						<0.1	
Ronnel	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0
PCBs														
Arochlor 1016	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1221	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1232	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1242	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1248	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0

Relative Percent Difference Table

ADE CONSULTING GROUP
SOLUTIONS THROUGH INNOVATION

		Lab Report Number	A101023.0120.00 (053-069)	A101023.0120.00 (053-069)		A101023.0120.00 (053-069)	319690		A101023.0120.00 (070-079)	A101023.0120.00 (053-069)		A101023.0120.00 (070-079)	319690	
		Field ID	DSI2.TP213_0.2-0.3	DSI2.BR1		DSI2.TP213_0.2-0.3	DS12.SR1		DSI2.TP233_0.4-0.5	DSI2.BR2		DSI2.TP233_0.4-0.5	DS12.SR2	
		Date	27 Mar 2023	27 Mar 2023		27 Mar 2023	27 Mar 2023		28 Mar 2023	27 Mar 2023		28 Mar 2023	28 Mar 2023	
Arochlor 1254	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
Arochlor 1260	mg/kg	0.1	<0.50	<0.50	0	<0.50	<0.1	0	<0.50	<0.50	0	<0.50	<0.1	0
PCBs (Sum of total)	mg/kg	0.1					<0.1						<0.1	
Perfluoroalkane Sulfonic Acids														
Perfluorobutane sulfonic acid (PFBS)	µg/kg	5	<5			<5								
Perfluoropentane sulfonic acid (PFPeS)	µg/kg	5	<5			<5								
Perfluorohexane sulfonic acid (PFHxS)	µg/kg	5	<5			<5								
Perfluoroheptane sulfonic acid (PFHpS)	µg/kg	5	<5			<5								
Perfluorooctane sulfonic acid (PFOS)	µg/kg	5	<5			<5								
Perfluoroalkane Carboxylic Acids														
Perfluorobutanoic acid (PFBA)	µg/kg	5	<5			<5								
Perfluoropentanoic acid (PFPeA)	µg/kg	5	<5			<5								
Perfluorohexanoic acid (PFHxA)	µg/kg	5	<5			<5								
Perfluoroheptanoic acid (PFHpA)	µg/kg	5	<5			<5								
Perfluorooctanoic acid (PFOA)	µg/kg	5	<5			<5								
Perfluorononanoic acid (PFNA)	µg/kg	5	<5			<5								
Perfluorodecanoic acid (PFDA)	µg/kg	5	<5			<5								
Perfluoroundecanoic acid (PFUnDA)	µg/kg	5	<5			<5								
Perfluorododecanoic acid (PFDoDA)	µg/kg	5	<5			<5								
Perfluorotridecanoic acid (PFTrDA)	µg/kg	5	<5			<5								
Perfluorotetradecanoic acid (PFTeDA)	µg/kg	5	<5			<5								
Halogenated Benzenes														
Hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	0	<0.10	<0.1	0	<0.10	<0.10	0	<0.10	<0.1	0

*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: 100 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 20 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

Appendix VI – Test Pit Logs

ADE CONSULTING GROUP
UNIT 6 / 7 MILLENNIUM COURT
SILVERWATER NSW 2128
Telephone: 1300976922

TEST PIT NUMBER TP201

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295422.58 m N 6251864.80 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, light to medium brown	M	MD		TP201 0.2-0.3	
			0.5		CL	**Natural** CLAY: medium to high plasticity, deep red with orange and grey mottling	M	F		TP201 0.5-0.6	
			1.0			Test pit TP201 terminated at 0.8m					

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Telephone: 1300976922

TEST PIT NUMBER TP202

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295439.36 m N 6251837.60 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, light to medium brown	M	MD			
					CL	**Natural** CLAY: low to medium plasticity, grey to brown with red and yellow mottling	M	F			
			0.5								
						Test pit TP202 terminated at 0.7m					
			1.0								

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TEST PIT NUMBER TP203

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 2295464.56 m N 6251806.71 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, low plasticity, with rootlets	M	MD		TP203 0.1-0.2	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP203 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP204

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295482.94 m N 6251776.27 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, low plasticity, with rootlets	D	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5		CL	**Natural** CLAY: low to medium plasticity, grey to brown, with red and yellow mottling	M	F			
						Test pit TP204 terminated at 0.8m					
			1.0								

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TEST PIT NUMBER TP205

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295479.27 m N 6251742.85 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Gravelly SAND: coarse grained, medium to dark brown, trace medium sub-rounded to sub-angular gravels	D	MD			
			1.0			Test pit TP205 terminated at 0.6m					

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Telephone: 1300976922

TEST PIT NUMBER TP206

CLIENT AT & L Pty Ltd

PROJECT NAME Environmental Site Assessment

PROJECT NUMBER A101023.0120

PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23

R.L. SURFACE

DATUM

EXCAVATION CONTRACTOR ANC Foster

SLOPE ---

BEARING ---

EQUIPMENT 8 tonne excavator

COORDINATES E 295482.42 m N 6251722.58 m

TEST PIT SIZE 1.2 x 0.5

LOGGED BY MH

CHECKED BY AH

NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: coarse grained,light grey to brown, trace sub-angular gravels	D	MD	0.4	TP206 0.2-0.3	
			0.5		CL	**Natural** CLAY: low to medium plasticity, grey to brown, with red and yellow mottling	M	F			
			1.0			Test pit TP206 terminated at 0.6m					

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SILVERWATER NSW 2128
Telephone: 1300976922

TEST PIT NUMBER TP207

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295511.51 m N 6251696.76 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	D	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP207 terminated at 0.5m					

TEST PIT NUMBER TP208

ADE CONSULTING GROUP
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SILVERWATER NSW 2128
Telephone: 1300976922

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295527.94 m N 6251663.27 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	D	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5		CL	**Natural** CLAY: medium to high plasticity, deep red with orange and grey mottling	M	F			
			1.0			Test pit TP208 terminated at 0.8m					

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TEST PIT NUMBER TP209

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295516.63 m N 6251631.22 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.0–0.9			**Fill** : Gravelly Silty SAND: coarse grained, dark brown, some sub-rounded to sub-angular gravels and pebbles, trace organic rootlets	M	MD			
			0.5						0.3	TP209 0.5-0.6	
			0.9–1.2		CL	**Natural** CLAY: Low to medium plasticity, grey to brown, with red and yellow mottling	M	F			
			1.2			Test pit TP209 terminated at 1.2m					

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TEST PIT NUMBER TP210

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295535.41 m N 6251597.41 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: coarse grained, trace sub-rounded gravels and cobbles, trace mottled yellow clay inclusions	D	MD	0.2	TP210 0.2-0.3	
			0.5		CL	**Natural** CLAY: low to medium plasticity, grey to brown with red and yellow mottling	M	St			
			1.0			Test pit TP210 terminated at 0.6m					

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TEST PIT NUMBER TP211

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295563.26 m N 6251579.53 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD	0.1	TP211 0.1-0.2	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5		CL	**Natural** Silty CLAY: low to medium plasticity, light orange with yellow and grey mottling, some organic rootlets	M	F	0.1	TP211 0.5-0.6	
			1.0			Test pit TP211 terminated at 0.7m					

TEST PIT NUMBER TP212

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295574.51 m N 62515552.05 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	D	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
					CL	**Natural** CLAY: low to medium plasticity, grey to brown, with red and yellow mottling	M	F			
			1.0			Test pit TP212 terminated at 0.6m					

TEST PIT NUMBER TP213

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295575.34 m N 6251519.86 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** Silty Gravelly CLAY: low plasticity, light grey, some sub-rounded to sub-angular gravels	M	MD	0.4	TP213 0.2-0.3	
			0.5								
					CL	**Natural** CLAY: Low to medium plasticity, red with orange mottling	M	F	0.4	TP213 0.7-0.8	
						Test pit TP213 terminated at 0.9m					
			1.0								
			1.5								

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TEST PIT NUMBER TP214

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295586.61 m N 6251483.48 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.0–0.5			**Fill** : Gravelly SAND: fine to coarse grained, dark brown, some angular gravels and rootlets	M	MD			
			0.5–1.5			**Fill** Silty Gravelly CLAY: low plasticity, light grey, some sub-angular gravels	M	S			
			1.5–1.7		CL	**Natural** CLAY: low to medium plasticity, grey to brown, with red and yellow mottling	M	F			
			2.0			Test pit TP214 terminated at 1.7m					

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TEST PIT NUMBER TP215

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295614.65 m N 6251470.77 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.0–1.5			**Fill** Silty CLAY: low plasticity clay, light grey, with orange mottling, some weathered shale fragments	M	F			Suspected re-worked natural materials.
									0.3	TP215 0.2-0.3	
									0.2	TP215 1.2-1.3	
			1.5–1.9		CL	**Natural** CLAY: medium to high plasticity, deep red, with orange and grey mottling	M	St			
			1.9			Test pit TP215 terminated at 1.9m					

TEST PIT NUMBER TP216

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295597.51 m N 6251421.21 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.0–0.8			**Fill** Gravelly SILT: fine to coarse grained, light grey, some sub-rounded to sub-angular gravels	M	VD	0.6	TP216 0.4-0.6	
			0.8–1.0		CL	**Natural** CLAY: medium to high plasticity, deep red with orange and grey mottling	M	F			
			1.0			Test pit TP216 terminated at 1m					

Depth scale: 0.5, 1.0, 1.5, 2.0

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TEST PIT NUMBER TP217

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295623.09 m N 6251394.21 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP217 terminated at 0.3m					
			1.0								

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TEST PIT NUMBER TP218

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295632.21 m N 6251371.84 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP218 terminated at 0.5m					

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TEST PIT NUMBER TP219

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295656.61 m N 6251356.28 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD	1.1	TP219 0.2-0.3	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP219 terminated at 0.3m					
			1.0								

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TEST PIT NUMBER TP220

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295671.80 m N 6251317.03 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP220 terminated at 0.5m					

TEST PIT NUMBER TP221

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295670.29 m N 6251279.82 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD	0.4	TP221 0.1-0.2	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP221 terminated at 0.5m					

TEST PIT NUMBER TP222

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295675.95 m N 6251260.34 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP222 terminated at 0.4m					
			1.0								

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TEST PIT NUMBER TP223

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295703.13 m N 6251237.44 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP223 terminated at 0.5m					
			1.0								

TEST PIT NUMBER TP224

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295716.10 m N 6251208.32 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP224 terminated at 0.4m					
			1.0								

TEST PIT NUMBER TP225

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295716.67 m N 6251174.86 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			
									0.2	TP225 0.4-0.5	
			0.5			Test pit TP225 terminated at 0.5m					
			1.0								

TEST PIT NUMBER TP226

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CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295725.43 m N 6251147.67 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP226 terminated at 0.5m					

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TEST PIT NUMBER TP227

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295747.66 m N 6251125.59 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
									0.4	TP227 0.3-0.4	
			0.5			**Natural** Silty CLAY: Low to medium plasticity, light orange, with yellow and grey mottling, some rootlets					
						Test pit TP227 terminated at 0.6m					
			1.0								

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TEST PIT NUMBER TP228

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295759.92 m N 6251100.70 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5		CL	**Natural** Silty CLAY: Low to medium plasticity, light orange, with yellow and grey mottling, some rootlets	M	F			
			1.0			Test pit TP228 terminated at 0.6m					

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TEST PIT NUMBER TP229

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295760.16 m N 6251060.76 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD	1	TP229 0.2-0.3	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP229 terminated at 0.4m					
			1.0								

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Telephone: 1300976922

TEST PIT NUMBER TP230

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295772.37 m N 6251037.91 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP230 terminated at 0.3m					
			1.0								

ADE CONSULTING GROUP
UNIT 6 / 7 MILLENNIUM COURT
SILVERWATER NSW 2128
Telephone: 1300976922

TEST PIT NUMBER TP231

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295795.16 m N 6251011.21 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD	0.4	TP231 0.1-0.2	Slight organic odour noted. FM: plastic, glass, general rubbish debris
						Test pit TP231 terminated at 0.3m					
			0.5								
			1.0								

ADE_BOREHOLE / TESTPIT 23.0120_MAMRE RD_V2F.GPJ GINT STD AUSTRALIA.GDT 14/4/23

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SILVERWATER NSW 2128
Telephone: 1300976922

TEST PIT NUMBER TP232

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295806.29 m N 6250988.71 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP232 terminated at 0.3m					
			1.0								

ADE CONSULTING GROUP
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Telephone: 1300976922

TEST PIT NUMBER TP233

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295804.78 m N 6250958.72 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD	0.2	TP233 0.4-0.5	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP233 terminated at 0.6m					

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TEST PIT NUMBER TP234

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295812.87 m N 6250926.53 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			'Slight organic odour noted.
									0.1	TP234 0.3-0.4	
			0.5								
									0.1	TP234 0.6-0.7	
			1.0								
						Test pit TP234 terminated at 1.2m					
			1.5								

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TEST PIT NUMBER TP235

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295837.38 m N 6250905.79 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Gravelly SAND: coarse grained, light yellow to orange, with sub-rounded to sub-angular gravels	D	L			FM: general rubbish debris, glass, aluminium
									0.7	TP235 0.3-0.4	
			0.5								
						Test pit TP235 terminated at 0.9m					
			1.0								

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Telephone: 1300976922

TEST PIT NUMBER TP236

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 27/3/23 **COMPLETED** 27/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295853.06 m N 6250872.47 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.0–1.0			**Fill** : Clayey SAND: coarse grained, light grey, mottled red and orange, with highly weathered shale fragments	M	MD	0.1 (at 0.8)	TP236 0.8-0.9	FM: general rubbish debris, glass, aluminium
			1.0			Test pit TP236 terminated at 1m					

Depth scale: 0.5, 1.0, 1.5

TEST PIT NUMBER TP237

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Telephone: 1300976922

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295853.97 m N 6250837.35 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty CLAY: low to medium plasticity, dark grey, with orange and yellow mottling, some rootlets	D	L			Slight organic odour noted. FM: plastic, glass, general rubbish debris
			1.0			Test pit TP237 terminated at 0.5m					

ADE CONSULTING GROUP
UNIT 6 / 7 MILLENNIUM COURT
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Telephone: 1300976922

TEST PIT NUMBER TP238

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE
DATUM
EXCAVATION CONTRACTOR ANC Foster
SLOPE ---
BEARING ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295866.38 m N 6250812.65 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH
CHECKED BY AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E			0.5			**Fill** : Silty SAND: fine to coarse grained, dark brown, with rootlets	M	MD			Slight organic odour noted. FM: plastic, glass, general rubbish debris
					CL	**Natural** CLAY: low to medium plasticity, grey to brown with red and yellow mottling		F			
			1.0			Test pit TP238 terminated at 0.7m					

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Telephone: 1300976922

TEST PIT NUMBER TP239

CLIENT AT & L Pty Ltd
PROJECT NAME Environmental Site Assessment
PROJECT NUMBER A101023.0120
PROJECT LOCATION Mamre and Abbotts Road, Kemps Creek NSW

DATE STARTED 28/3/23 **COMPLETED** 28/3/23
R.L. SURFACE **DATUM**
EXCAVATION CONTRACTOR ANC Foster
SLOPE --- **BEARING** ---
EQUIPMENT 8 tonne excavator
COORDINATES E 295889.60 m N 6250787.44 m
TEST PIT SIZE 1.2 x 0.5
LOGGED BY MH **CHECKED BY** AH
NOTES

Method	Water	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
E						**Fill** : Gravelly SAND: coarse grained, medium brown, with sub-angular gravels	M	L	0.5	TP239 0.2-0.3	Slight organic odour noted. FM: plastic, glass, general rubbish debris
			0.5			Test pit TP239 terminated at 0.4m					
			1.0								

Appendix VII – Analytical Reports and Chain of Custody Documentation

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Sydney Laboratory Services

A division of A. D. Envirotech Australia Pty Ltd
A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This certificate of analysis contains General Comments and Analytical Results. Quality Control Report and Laboratory Quality Acceptance Criteria have been issued separately.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

Kaiyu Li

General Comments

Samples are analysed on as received basis. Sampling is not covered by NATA accreditation.

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

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

Samples were analysed within holding time described by laboratory internal procedures if not stated otherwise. If samples delivered do not meet required analytical criteria, results will be marked with ^.

However surrogate standards are added to samples, results are not corrected for standards recoveries.

Analysis of VOC in water samples are performed on unfiltered waters (as received) spiked with surrogates and injection standards only.

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Certificate of Analysis

Contact:	Andrew Hunt	**Date Reported:**	5/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	17
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	29/03/2023
		Date of Analysis:	29/03/2023

Cust Ref: A101023.0120.00 002 L05

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Certificate of Analysis

		Sample ID:	2023008053	2023008054	2023008055	2023008056	2023008057	2023008058	2023008059	2023008060	2023008061	2023008062	2023008063
		Sample Name	DSI2.BR1	DSI2.BR2	DSI2.TP201_0.2-0.3	DSI2.TP201_0.5-0.6	DSI2.TP203_0.1-0.2	DSI2.TP206_0.2-0.3	DSI2.TP209_0.5-0.6	DSI2.TP210_0.2-0.3	DSI2.TP213_0.2-0.3	DSI2.TP213_0.7-0.8	DSI2.TP215_0.2-0.3
Parameter	*Units*	*PQL*	Sample Date:27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG7 & ORG8													
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		92	97	93	91	93	92	97	91	92	95	95
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01													
Arsenic	mg/kg	5	11.8	7.7	6.5	7.7	8.8	13.4	14.2	9.2	<5.0	11.6	7.2
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	41.8	20.8	78.7	16.1	56.3	20.7	63.8	14.3	22.3	15.7	13.3
Copper	mg/kg	5	23.7	25.1	27.9	12.6	59.6	20.0	28.9	41.4	35.3	21.7	43.3
Lead	mg/kg	5	42.8	62.5	109.6	16.1	94.4	45.7	146.8	22.3	60.2	18.0	26.7
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1	58.4	14.5	77.3	5.4	39.0	11.4	54.5	30.9	50.3	8.1	32.2
Zinc	mg/kg	5	57.1	94.4	90.0	17.5	151.2	45.2	94.5	100.0	84.5	31.5	117.7
ESA-P-12													
% Moisture Content	%		10.0	11.9	14.2	17.3	14.1	11.9	6.8	10.4	8.4	14.1	15.2
ESA-P-ORG(12 - 15)													
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Sydney Laboratory Services
A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court
Silverwater 2128
Ph: (02) 9648-6669

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Sydney Laboratory Services

Certificate of Analysis

		Sample ID:	2023008053	2023008054	2023008055	2023008056	2023008057	2023008058	2023008059	2023008060	2023008061	2023008062	2023008063
		Sample Name	DSI2.BR1	DSI2.BR2	DSI2.TP201_0.2-0.3	DSI2.TP201_0.5-0.6	DSI2.TP203_0.1-0.2	DSI2.TP206_0.2-0.3	DSI2.TP209_0.5-0.6	DSI2.TP210_0.2-0.3	DSI2.TP213_0.2-0.3	DSI2.TP213_0.7-0.8	DSI2.TP215_0.2-0.3
Parameter	*Units*	*PQL*	Sample Date:27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		89	85	91	87	82	82	81	89	83	85	90
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Sydney Laboratory Services

Certificate of Analysis

		Sample ID:	2023008053	2023008054	2023008055	2023008056	2023008057	2023008058	2023008059	2023008060	2023008061	2023008062	2023008063
		Sample Name	DSI2.BR1	DSI2.BR2	DSI2.TP201_0.2-0.3	DSI2.TP201_0.5-0.6	DSI2.TP203_0.1-0.2	DSI2.TP206_0.2-0.3	DSI2.TP209_0.5-0.6	DSI2.TP210_0.2-0.3	DSI2.TP213_0.2-0.3	DSI2.TP213_0.7-0.8	DSI2.TP215_0.2-0.3
Parameter	***Units***	***PQL***	Sample Date:27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		104	98	99	96	91	97	92	107	98	103	99
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

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Certificate of Analysis

		Sample ID:	2023008053	2023008054	2023008055	2023008056	2023008057	2023008058	2023008059	2023008060	2023008061	2023008062	2023008063
		Sample Name	DSI2.BR1	DSI2.BR2	DSI2.TP201_0.2-0.3	DSI2.TP201_0.5-0.6	DSI2.TP203_0.1-0.2	DSI2.TP206_0.2-0.3	DSI2.TP209_0.5-0.6	DSI2.TP210_0.2-0.3	DSI2.TP213_0.2-0.3	DSI2.TP213_0.7-0.8	DSI2.TP215_0.2-0.3
Parameter	*Units*	*PQL*	Sample Date:27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		90	88	95	90	83	84	81	91	84	92	91

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Certificate of Analysis

		Sample ID:	2023008053	2023008054	2023008055	2023008056	2023008057	2023008058	2023008059	2023008060	2023008061	2023008062	2023008063
		Sample Name	DSI2.BR1	DSI2.BR2	DSI2.TP201_0.2-0.3	DSI2.TP201_0.5-0.6	DSI2.TP203_0.1-0.2	DSI2.TP206_0.2-0.3	DSI2.TP209_0.5-0.6	DSI2.TP210_0.2-0.3	DSI2.TP213_0.2-0.3	DSI2.TP213_0.7-0.8	DSI2.TP215_0.2-0.3
Parameter	***Units***	***PQL***	Sample Date:27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG16													
PFBA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFPeA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFBS	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFHxA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFPeS	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFHpA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFOA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFHpS	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFOS	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFDA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFUdA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFDoA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFTrDA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFTeDA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFNA	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
PFHxS	ug/kg	5	-	-	<5	-	<5	-	-	-	<5	-	-
MPFBA (Surr.)	%		-	-	79	-	112	-	-	-	99	-	-
M3PFBS (Surr.)	%		-	-	94	-	96	-	-	-	89	-	-
MPFOS (Surr.)	%		-	-	114	-	89	-	-	-	123	-	-
MPFHxA (Surr.)	%		-	-	97	-	80	-	-	-	87	-	-
MPFOA (Surr.)	%		-	-	86	-	89	-	-	-	89	-	-
MPFUdA (Surr.)	%		-	-	81	-	72	-	-	-	102	-	-

Sydney Laboratory Services
A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court
Silverwater 2128
Ph: (02) 9648-6669

Batch Number : 2301193

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Certificate of Analysis

Parameter	Units	PQL	Sample ID: 2023008053 Sample Name: DSI2.BR1 Sample Date:27/03/2023	2023008054 DSI2.BR2 27/03/2023	2023008055 DSI2.TP201_0.2-0.3 27/03/2023	2023008056 DSI2.TP201_0.5-0.6 27/03/2023	2023008057 DSI2.TP203_0.1-0.2 27/03/2023	2023008058 DSI2.TP206_0.2-0.3 27/03/2023	2023008059 DSI2.TP209_0.5-0.6 27/03/2023	2023008060 DSI2.TP210_0.2-0.3 27/03/2023	2023008061 DSI2.TP213_0.2-0.3 27/03/2023	2023008062 DSI2.TP213_0.7-0.8 27/03/2023	2023008063 DSI2.TP215_0.2-0.3 27/03/2023
ESA-P-ORG(3,8)													
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	125	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	125	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	119	<100	<100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	119	<100	<100	<100	<100	<100	<100

Sydney Laboratory Services

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Certificate of Analysis

		Sample ID:	2023008064	2023008065	2023008066	2023008067	2023008068	2023008069
		Sample Name	DSI2.TP215_1.2-1.3	DSI2.TP216_0.4-0.6	DSI2.TP234_0.3-0.4	DSI2.TP234_0.6-0.7	DSI2.TP236_0.3-0.4	DSI2.TP236_0.8-0.9
Parameter	*Units*	*PQL*	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG7 & ORG8								
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		98	90	91	93	93	94
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01								
Arsenic	mg/kg	5	7.1	10.9	8.3	12.4	<5.0	12.2
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	21.5	22.5	3.5	34.1	53.9	17.1
Copper	mg/kg	5	44.7	11.6	17.0	24.0	50.6	31.2
Lead	mg/kg	5	31.2	27.0	42.6	128.6	93.0	22.1
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1	43.6	10.3	2.0	25.0	87.9	9.0
Zinc	mg/kg	5	120.6	19.8	16.1	71.4	118.8	33.4
ESA-P-12								
% Moisture Content	%		13.8	13.0	10.5	18.4	11.8	18.6
ESA-P-ORG(12 - 15)								
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

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SLS Sydney Laboratory Services

Certificate of Analysis

Parameter	Units	PQL	2023008064	2023008065	2023008066	2023008067	2023008068	2023008069
Sample Name			DSI2.TP215_1.2-1.3	DSI2.TP216_0.4-0.6	DSI2.TP234_0.3-0.4	DSI2.TP234_0.6-0.7	DSI2.TP236_0.3-0.4	DSI2.TP236_0.8-0.9
			27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Sum of Positive PAHs	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.35
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	0.70
p-Terphenyl-d14 (Surr.)	%		87	90	86	91	79	82
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

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Certificate of Analysis

		Sample ID:	2023008064	2023008065	2023008066	2023008067	2023008068	2023008069
		Sample Name	DSI2.TP215_1.2-1.3	DSI2.TP216_0.4-0.6	DSI2.TP234_0.3-0.4	DSI2.TP234_0.6-0.7	DSI2.TP236_0.3-0.4	DSI2.TP236_0.8-0.9
Parameter	*Units*	*PQL*	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		100	102	98	98	91	91
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Sydney Laboratory Services

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Certificate of Analysis

Parameter	Units	PQL	2023008064	2023008065	2023008066	2023008067	2023008068	2023008069
Sample Name			DSI2.TP215_1.2-1.3	DSI2.TP216_0.4-0.6	DSI2.TP234_0.3-0.4	DSI2.TP234_0.6-0.7	DSI2.TP236_0.3-0.4	DSI2.TP236_0.8-0.9
			27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		88	90	87	90	80	84
ESA-P-ORG16								
PFBA	ug/kg	5	-	-	-	-	<5	-
PFPeA	ug/kg	5	-	-	-	-	<5	-
PFBS	ug/kg	5	-	-	-	-	<5	-
PFHxA	ug/kg	5	-	-	-	-	<5	-
PFPeS	ug/kg	5	-	-	-	-	<5	-
PFHpA	ug/kg	5	-	-	-	-	<5	-
PFOA	ug/kg	5	-	-	-	-	<5	-
PFHpS	ug/kg	5	-	-	-	-	<5	-
PFOS	ug/kg	5	-	-	-	-	<5	-
PFDA	ug/kg	5	-	-	-	-	<5	-
PFUdA	ug/kg	5	-	-	-	-	<5	-
PFDoA	ug/kg	5	-	-	-	-	<5	-
PFTrDA	ug/kg	5	-	-	-	-	<5	-
PFTeDA	ug/kg	5	-	-	-	-	<5	-
PFNA	ug/kg	5	-	-	-	-	<5	-
PFHxS	ug/kg	5	-	-	-	-	<5	-
MPFBA (Surr.)	%		-	-	-	-	121	-
M3PFBS (Surr.)	%		-	-	-	-	106	-
MPFOS (Surr.)	%		-	-	-	-	107	-
MPFHxA (Surr.)	%		-	-	-	-	103	-
MPFOA (Surr.)	%		-	-	-	-	114	-
MPFUdA (Surr.)	%		-	-	-	-	96	-

Sydney Laboratory Services

Certificate of Analysis

		Sample ID:	2023008064	2023008065	2023008066	2023008067	2023008068	2023008069
		Sample Name	DSI2.TP215_1.2-1.3	DSI2.TP216_0.4-0.6	DSI2.TP234_0.3-0.4	DSI2.TP234_0.6-0.7	DSI2.TP236_0.3-0.4	DSI2.TP236_0.8-0.9
Parameter	*Units*	*PQL*	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023	27/03/2023
ESA-P-ORG(3,8)								
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	<100	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	<100	<100	<100

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Sydney Laboratory Services

A division of A. D. Envirotech Australia Pty Ltd
A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This certificate of analysis contains General Comments and Analytical Results. Quality Control Report and Laboratory Quality Acceptance Criteria have been issued separately.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

Kaiyu Li

General Comments

Samples are analysed on as received basis. Sampling is not covered by NATA accreditation.

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

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

Samples were analysed within holding time described by laboratory internal procedures if not stated otherwise. If samples delivered do not meet required analytical criteria, results will be marked with ^.

However surrogate standards are added to samples, results are not corrected for standards recoveries.

Analysis of VOC in water samples are performed on unfiltered waters (as received) spiked with surrogates and injection standards only.

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Sydney Laboratory Services

Certificate of Analysis

Contact:	Andrew Hunt	**Date Reported:**	5/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	10
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	29/03/2023
		Date of Analysis:	29/03/2023

Cust Ref: A101023.0120.00 002 L05

Glossary:
*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Certificate of Analysis

Parameter	Units	PQL	2023008070 DSI2.TP211_0.1-0.2 Sample Date: 27/03/2023	2023008071 DSI2.TP211_0.5-0.6 27/03/2023	2023008072 DSI2.TP219_0.2-0.3 28/03/2023	2023008073 DSI2.TP221_0.1-0.2 28/03/2023	2023008074 DSI2.TP225_0.4-0.5 28/03/2023	2023008075 DSI2.TP227_0.3-0.4 28/03/2023	2023008076 DSI2.TP229_0.2-0.3 28/03/2023	2023008077 DSI2.TP231_0.1-0.2 28/03/2023	2023008078 DSI2.TP233_0.4-0.5 28/03/2023	2023008079 DSI2.TP239_0.2-0.3 28/03/2023
ESA-P-ORG7 & ORG8												
Benzene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Toluene	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
m.p Xylene	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
o Xylene	mg/kg	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sum of BTEX	mg/kg	2	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00
Total Xylenes	mg/kg	2	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Fluorobenzene (Surr.)	%		90	91	91	90	93	92	94	91	94	105
C6-C10	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C10 minus BTEX	mg/kg	35	<35	<35	<35	<35	<35	<35	<35	<35	<35	<35
C6-C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
ESA-MP-01,ICP-01												
Arsenic	mg/kg	5	6.7	10.5	<5.0	7.5	<5.0	6.9	8.6	6.0	<5.0	7.0
Cadmium	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	mg/kg	1	53.2	23.0	28.8	30.0	50.2	88.3	44.2	57.4	31.2	53.1
Copper	mg/kg	5	29.9	25.1	59.8	63.9	141.8	76.3	74.2	92.3	25.2	73.5
Lead	mg/kg	5	55.9	25.1	198.0	119.0	271.2	232.9	79.1	278.8	115.3	215.1
Mercury	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Nickel	mg/kg	1	48.0	10.9	74.4	77.2	70.1	74.5	80.8	128.8	29.5	102.6
Zinc	mg/kg	5	104.4	32.3	190.4	209.2	181.6	184.2	394.7	389.8	80.5	254.1
ESA-P-12												
% Moisture Content	%		15.8	20.0	11.6	7.2	15.4	15.6	12.4	24.7	5.0	7.2
ESA-P-ORG(12 - 15)												
Acenaphthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Certificate of Analysis

		Sample ID:	2023008070	2023008071	2023008072	2023008073	2023008074	2023008075	2023008076	2023008077	2023008078	2023008079
		Sample Name	DSI2.TP211_0.1-0.2	DSI2.TP211_0.5-0.6	DSI2.TP219_0.2-0.3	DSI2.TP221_0.1-0.2	DSI2.TP225_0.4-0.5	DSI2.TP227_0.3-0.4	DSI2.TP229_0.2-0.3	DSI2.TP231_0.1-0.2	DSI2.TP233_0.4-0.5	DSI2.TP239_0.2-0.3
Parameter	*Units*	*PQL*	Sample Date: 27/03/2023	27/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
Acenaphthylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.43	<0.30	0.93	<0.30	1.56
Benzo[a]pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.59	<0.30	1.08	<0.30	1.53
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.67	<0.30	0.97	<0.30	1.34
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.58	<0.30	1.02	<0.30	1.43
Chrysene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.43	<0.30	0.84	<0.30	1.37
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Fluoranthene	mg/kg	0.3	0.30	<0.30	<0.30	<0.30	<0.30	0.83	<0.30	1.69	<0.30	4.14
Fluorene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.64	<0.30	0.96	<0.30	1.16
Naphthalene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Phenanthrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	1.24
Pyrene	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.83	<0.30	1.63	<0.30	3.55
Sum of Positive PAHs	mg/kg	0.3	0.30	<0.30	<0.30	<0.30	<0.30	5.00	<0.30	9.12	<0.30	17.32
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.3	<0.30	<0.30	<0.30	<0.30	<0.30	0.77	<0.30	1.39	<0.30	1.97
Benzo(a)pyrene TEQ (Half PQL)	mg/kg	0.3	0.35	0.35	0.35	0.35	0.35	0.92	0.35	1.54	0.35	2.12
Benzo(a)pyrene TEQ (PQL)	mg/kg	0.3	0.70	0.70	0.70	0.70	0.70	1.07	0.70	1.69	0.70	2.27
p-Terphenyl-d14 (Surr.)	%		120	83	102	105	104	139	102	132	108	104
aldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
a-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
b-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
d-BHC	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
cis-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
trans-chlordane	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Certificate of Analysis

		Sample ID:	2023008070	2023008071	2023008072	2023008073	2023008074	2023008075	2023008076	2023008077	2023008078	2023008079
		Sample Name	DSI2.TP211_0.1-0.2	DSI2.TP211_0.5-0.6	DSI2.TP219_0.2-0.3	DSI2.TP221_0.1-0.2	DSI2.TP225_0.4-0.5	DSI2.TP227_0.3-0.4	DSI2.TP229_0.2-0.3	DSI2.TP231_0.1-0.2	DSI2.TP233_0.4-0.5	DSI2.TP239_0.2-0.3
Parameter	*Units*	*PQL*	Sample Date: 27/03/2023	27/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
4,4'-DDD	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
dieldrin	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endosulfan I	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan II	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin	mg/kg	0.2	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
endrin aldehyde	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
endrin ketone	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methoxychlor	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
TCMX (Surr.)	%		130	62	68	68	73	138	71	118	75	72
chlorpyrifos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
diazinon	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
fenchlorphos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
methyl parathion	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
prophos	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Aroclor 1016	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1221	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1232	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1242	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Sydney Laboratory Services

Certificate of Analysis

Parameter	Units	PQL	Sample ID: 2023008070 Sample Name: DSI2.TP211_0.1-0.2 Sample Date: 27/03/2023	2023008071 DSI2.TP211_0.5-0.6 27/03/2023	2023008072 DSI2.TP219_0.2-0.3 28/03/2023	2023008073 DSI2.TP221_0.1-0.2 28/03/2023	2023008074 DSI2.TP225_0.4-0.5 28/03/2023	2023008075 DSI2.TP227_0.3-0.4 28/03/2023	2023008076 DSI2.TP229_0.2-0.3 28/03/2023	2023008077 DSI2.TP231_0.1-0.2 28/03/2023	2023008078 DSI2.TP233_0.4-0.5 28/03/2023	2023008079 DSI2.TP239_0.2-0.3 28/03/2023
Aroclor 1248	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1254	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Aroclor 1260	mg/kg	0.5	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
2-fluorobiphenyl (Surr.)	%		139	67	82	83	86	134	83	130	90	85

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Sydney Laboratory Services

Certificate of Analysis

Parameter	Units	PQL	Sample Date: 27/03/2023	27/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
Sample ID:			2023008070	2023008071	2023008072	2023008073	2023008074	2023008075	2023008076	2023008077	2023008078	2023008079
Sample Name			DSI2.TP211_0.1-0.2	DSI2.TP211_0.5-0.6	DSI2.TP219_0.2-0.3	DSI2.TP221_0.1-0.2	DSI2.TP225_0.4-0.5	DSI2.TP227_0.3-0.4	DSI2.TP229_0.2-0.3	DSI2.TP231_0.1-0.2	DSI2.TP233_0.4-0.5	DSI2.TP239_0.2-0.3
ESA-P-ORG16												
PFBA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFPeA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFBS	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFHxA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFPeS	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFHpA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFOA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFHpS	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFOS	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFDA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFUdA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFDoA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFTrDA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFTeDA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFNA	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
PFHxS	ug/kg	5	-	-	-	-	-	-	-	-	-	<5
MPFBA (Surr.)	%		-	-	-	-	-	-	-	-	-	79
M3PFBS (Surr.)	%		-	-	-	-	-	-	-	-	-	76
MPFOS (Surr.)	%		-	-	-	-	-	-	-	-	-	119
MPFHxA (Surr.)	%		-	-	-	-	-	-	-	-	-	85
MPFOA (Surr.)	%		-	-	-	-	-	-	-	-	-	80
MPFUdA (Surr.)	%		-	-	-	-	-	-	-	-	-	78

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Certificate of Analysis

		Sample ID:	2023008070	2023008071	2023008072	2023008073	2023008074	2023008075	2023008076	2023008077	2023008078	2023008079
		Sample Name	DSI2.TP211_0.1-0.2	DSI2.TP211_0.5-0.6	DSI2.TP219_0.2-0.3	DSI2.TP221_0.1-0.2	DSI2.TP225_0.4-0.5	DSI2.TP227_0.3-0.4	DSI2.TP229_0.2-0.3	DSI2.TP231_0.1-0.2	DSI2.TP233_0.4-0.5	DSI2.TP239_0.2-0.3
Parameter	*Units*	*PQL*	Sample Date: 27/03/2023	27/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
ESA-P-ORG(3,8)												
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	126	<100	132	113	169	<100	143
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	138	<100	185
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	126	<100	132	113	307	<100	328
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	100	<100	111	113	124	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	100	<100	159
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	100	<100	111	113	224	<100	159

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Certificate of Analysis

Parameter	Units	PQL	2023008070	2023008071	2023008072	2023008073	2023008074	2023008075	2023008076	2023008077	2023008078	2023008079
Sample Name			DSI2.TP211_0.1-0.2	DSI2.TP211_0.5-0.6	DSI2.TP219_0.2-0.3	DSI2.TP221_0.1-0.2	DSI2.TP225_0.4-0.5	DSI2.TP227_0.3-0.4	DSI2.TP229_0.2-0.3	DSI2.TP231_0.1-0.2	DSI2.TP233_0.4-0.5	DSI2.TP239_0.2-0.3
			Sample Date: 27/03/2023	27/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023	28/03/2023
ESA-P-ORG(3,8)												
>C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C16-C34	mg/kg	100	<100	<100	<100	126	<100	132	113	169	<100	143
>C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	138	<100	185
>C10-C40 (Sum of total)	mg/kg	100	<100	<100	<100	126	<100	132	113	307	<100	328
>C10-C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
>C15-C28	mg/kg	100	<100	<100	<100	100	<100	111	113	124	<100	<100
>C29-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	100	<100	159
>C10-C36 (Sum of total)	mg/kg	100	<100	<100	<100	100	<100	111	113	224	<100	159

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Sydney Laboratory Services

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Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This Quality Control Report contains results of QAQC samples analysis and the Laboratory Acceptance Criteria.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

General Comments

Duplicate samples and matrix spike may not be prepared on smaller jobs, however are analysed at frequency. QAQC samples shown within the report as e.g. Batch Blank, Batch Matrix Spike were performed on samples not reported on that Certificate of Analysis.

Blank This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in the same manner as for samples.
Duplicate This is the interlaboratory split of a random sample from the processed batch
Matrix Spike A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class.
Surr. (Surrogate Spike) Surrogates are known additions to each sample, blank and matrix spike or LCS in a batch. Surrogates are chosen as a compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Blank shall be < PQL
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals/PFAS, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150%

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Quality Control Report

Contact:	Andrew Hunt	**Date Reported:**	5/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	26
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	29/03/2023
		Date of Analysis:	29/03/2023

Cust Ref: A101023.0120.00 002 L05

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Batch Number : 2301193

Report Number : A101023.0120.00 (053-069)

Quality Control Report

Parameter	Units	PQL	D202300805401	D202300806301
Sample Name			DSI2.BR2	DSI2.TP215_0.2-0.3
ESA-P-ORG7 & ORG8				
Benzene			Pass	Pass
Toluene			Pass	Pass
Ethylbenzene			Pass	Pass
m.p Xylene			Pass	Pass
o Xylene			Pass	Pass
Fluorobenzene (Surr.)	%		94	96
C6-C10			Pass	Pass
C6-C9			Pass	Pass

Parameter	Units	PQL	D202300805402	D202300806302
Sample Name			DSI2.BR2	DSI2.TP215_0.2-0.3
ESA-P-ORG(12 - 15)				
Acenaphthene			Pass	Pass
Acenaphthylene			Pass	Pass
Anthracene			Pass	Pass
Benzo[a]anthracene			Pass	Pass
Benzo[a]pyrene			Pass	Pass
Benzo[g,h,i]perylene			Pass	Pass
Benzo[b,k]fluoranthene			Pass	Pass
Chrysene			Pass	Pass
Dibenzo[a,h]anthracene			Pass	Pass
Fluoranthene			Pass	Pass
Fluorene			Pass	Pass
Indeno(1,2,3-cd)pyrene			Pass	Pass
Naphthalene			Pass	Pass
Phenanthrene			Pass	Pass
Pyrene			Pass	Pass

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Silverwater 2128
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p-Terphenyl-d14 (Surr.)	%		83	90
aldrin			Pass	Pass
a-BHC			Pass	Pass
b-BHC			Pass	Pass
d-BHC			Pass	Pass
g-BHC (lindane)			Pass	Pass
cis-chlordane			Pass	Pass
trans-chlordane			Pass	Pass
4,4'-DDD			Pass	Pass
4,4'-DDE			Pass	Pass
4,4'-DDT			Pass	Pass
dieldrin			Pass	Pass
endosulfan I			Pass	Pass
endosulfan II			Pass	Pass
endosulfan sulfate			Pass	Pass
endrin			Pass	Pass
endrin aldehyde			Pass	Pass
endrin ketone			Pass	Pass
heptachlor			Pass	Pass
heptachlor epoxide			Pass	Pass
hexachlorobenzene			Pass	Pass
methoxychlor			Pass	Pass
TCMX (Surr.)	%		95	97
chlorpyrifos			Pass	Pass
chlorpyrifos methyl			Pass	Pass
diazinon			Pass	Pass
fenchlorphos			Pass	Pass
methyl parathion			Pass	Pass
prophos			Pass	Pass
tributylphosphorotrithioite			Pass	Pass
Aroclor 1016			Pass	Pass
Aroclor 1221			Pass	Pass

Aroclor 1232			Pass	Pass
Aroclor 1242			Pass	Pass
Aroclor 1248			Pass	Pass
Aroclor 1254			Pass	Pass
Aroclor 1260			Pass	Pass
2-fluorobiphenyl (Surr.)	%		86	91

		Sample ID:	**D202300805403**	**D202300806303**
		Sample Name	**DSI2.BR2**	**DSI2.TP215_0.2-0.3**
Parameter	***Units***	***PQL***		
ESA-P-ORG(3,8)				
>C10-C16			Pass	Pass
>C16-C34			Pass	Pass
>C34-C40			Pass	Pass
>C10-C14			Pass	Pass
>C15-C28			Pass	Pass
>C29-C36			Pass	Pass

		Sample ID:	**D202300805404**	**D202300806304**
		Sample Name	**DSI2.BR2**	**DSI2.TP215_0.2-0.3**
Parameter	***Units***	***PQL***		
ESA-MP-01,ICP-01				
Arsenic			Pass	Pass
Cadmium			Pass	Pass
Chromium			Pass	Pass
Copper			Pass	Pass
Lead			Pass	Pass
Mercury			Pass	Pass
Nickel			Pass	Pass
Zinc			Pass	Pass

		Sample ID:	**D202300805701**	**D202300810801**
		Sample Name	**DSI2.TP203_0.1-0.2**	**WAC349.TP4**
Parameter	***Units***	***PQL***		
ESA-P-ORG16				
PFBA			Pass	Pass
PFPeA			Pass	Pass
PFBS			Pass	Pass
PFHxA			Pass	Pass
PFPeS			Pass	Pass
PFHpA			Pass	Pass
PFOA			Pass	Pass
PFHpS			Pass	Pass
PFOS			Pass	Pass
PFDA			Pass	Pass
PFUdA			Pass	Pass
PFDoA			Pass	Pass
PFTrDA			Pass	Pass
PFTeDA			Pass	Pass
PFNA			Pass	Pass
PFHxS			Pass	Pass
MPFBA	%		78	111
M3PFBS	%		83	78
MPFOS	%		127	91
MPFHxA	%		77	112
MPFOA	%		108	81
MPFUdA	%		75	112

		Sample ID:	**Q2023001816**
		Sample Name	
Parameter	***Units***	***PQL***	BTEX Blank - Soil
ESA-P-ORG7 & ORG8			
Benzene	mg/kg	0.5	<0.50

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Toluene	mg/kg	0.5	<0.50
Ethylbenzene	mg/kg	1	<1.0
m.p Xylene	mg/kg	2	<2.0
o Xylene	mg/kg	1	<1.0
C6-C10	mg/kg	35	<35
C6-C9	mg/kg	25	<25

Sample ID: **Q2023001817**

Sample Name

Parameter	***Units***	***PQL***	BTEX Blank Sp-Soil
ESA-P-ORG7 & ORG8			
Benzene	%		127
Toluene	%		111
Ethylbenzene	%		104
m.p Xylene	%		89
o Xylene	%		96
Fluorobenzene (Surr.)	%		88

Sample ID: **Q2023001818**

Sample Name

Parameter	***Units***	***PQL***	PCB Blank - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	mg/kg	0.3	<0.30
Acenaphthylene	mg/kg	0.3	<0.30
Anthracene	mg/kg	0.3	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30
Chrysene	mg/kg	0.3	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30
Fluoranthene	mg/kg	0.3	<0.30
Fluorene	mg/kg	0.3	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30

Naphthalene	mg/kg	0.3	<0.30
Phenanthrene	mg/kg	0.3	<0.30
Pyrene	mg/kg	0.3	<0.30
aldrin	mg/kg	0.1	<0.10
a-BHC	mg/kg	0.1	<0.10
b-BHC	mg/kg	0.1	<0.10
d-BHC	mg/kg	0.1	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10
cis-chlordane	mg/kg	0.1	<0.10
trans-chlordane	mg/kg	0.1	<0.10
4,4'-DDD	mg/kg	0.1	<0.10
4,4'-DDE	mg/kg	0.1	<0.10
4,4'-DDT	mg/kg	0.1	<0.10
dieldrin	mg/kg	0.1	<0.10
endosulfan I	mg/kg	0.2	<0.20
endosulfan II	mg/kg	0.2	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10
endrin	mg/kg	0.2	<0.20
endrin aldehyde	mg/kg	0.1	<0.10
endrin ketone	mg/kg	0.1	<0.10
heptachlor	mg/kg	0.1	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10
methoxychlor	mg/kg	0.1	<0.10
chlorpyrifos	mg/kg	0.1	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10
diazinon	mg/kg	0.1	<0.10
fenchlorphos	mg/kg	0.1	<0.10
methyl parathion	mg/kg	0.1	<0.10
prophos	mg/kg	0.1	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10
Aroclor 1016	mg/kg	0.5	<0.50

Aroclor 1221	mg/kg	0.5	<0.50
Aroclor 1232	mg/kg	0.5	<0.50
Aroclor 1242	mg/kg	0.5	<0.50
Aroclor 1248	mg/kg	0.5	<0.50
Aroclor 1254	mg/kg	0.5	<0.50
Aroclor 1260	mg/kg	0.5	<0.50

Sample ID: **Q2023001819**

Sample Name

Parameter	***Units***	***PQL***	PCB Blank Sp - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	%		82
Anthracene	%		99
Fluoranthene	%		85
Naphthalene	%		98
Phenanthrene	%		86
Pyrene	%		94
p-Terphenyl-d14 (Surr.)	%		91
aldrin	%		91
endrin	%		69
hexachlorobenzene	%		98
TCMX (Surr.)	%		103
chlorpyrifos	%		77
diazinon	%		83
2-fluorobiphenyl (Surr.)	%		92
Aroclor 1016	%		95

Sample ID: **Q2023001820**

Sample Name

Parameter	***Units***	***PQL***	TRH Blank-Soil
ESA-P-ORG(3,8)			
>C10-C16	mg/kg	50	<50
>C16-C34	mg/kg	100	<100
>C34-C40	mg/kg	100	<100

>C10-C14	mg/kg	50	<50
>C15-C28	mg/kg	100	<100
>C29-C36	mg/kg	100	<100

Sample ID: **Q2023001821**

Sample Name

Parameter	*Units*	*PQL*	TRH Blank Spike-Soil
ESA-P-ORG(3,8)			
>C10-C16	%		100
>C10-C14	%		95

Sample ID: **Q2023001822**

Sample Name

Parameter	*Units*	*PQL*	PFAS Blank - Soil
ESA-P-ORG16			
PFBA	ug/kg	5	<5
PFPeA	ug/kg	5	<5
PFBS	ug/kg	5	<5
PFHxA	ug/kg	5	<5
PFPeS	ug/kg	5	<5
PFHpA	ug/kg	5	<5
PFOA	ug/kg	5	<5
PFHpS	ug/kg	5	<5
PFOS	ug/kg	5	<5
PFDA	ug/kg	5	<5
PFUdA	ug/kg	5	<5
PFDoA	ug/kg	5	<5
PFTrDA	ug/kg	5	<5
PFTeDA	ug/kg	5	<5
PFNA	ug/kg	5	<5
PFHxS	ug/kg	5	<5
MPFBA (Surr.)	%		101
M3PFBS (Surr.)	%		81

MPFOS (Surr.)	%		89
MPFHxA (Surr.)	%		84
MPFOA (Surr.)	%		79
MPFUdA (Surr.)	%		126

Sample ID: **Q2023001823**

Sample Name

Parameter	***Units***	***PQL***	PFAS Blank Sp - Soil
ESA-P-ORG16			
PFBA	%		110
PFPeA	%		122
PFBS	%		97
PFHxA	%		117
PFPeS	%		118
PFHpA	%		91
PFOA	%		125
PFHpS	%		128
PFOS	%		98
PFDA	%		86
PFUdA	%		122
PFDoA	%		125
PFTrDA	%		120
PFTeDA	%		115
PFNA	%		127
PFHxS	%		108
MPFBA (Surr.)	%		88
M3PFBS (Surr.)	%		79
MPFOS (Surr.)	%		115
MPFHxA (Surr.)	%		75
MPFOA (Surr.)	%		73
MPFUdA (Surr.)	%		86

Sample ID: **Q2023001842**

Sample Name

Parameter	***Units***	***PQL***	Metals Blank - Soil
ESA-MP-01,ICP-01			
Arsenic	mg/kg	5	<5.0
Cadmium	mg/kg	0.3	<0.30
Chromium	mg/kg	1	<1.0
Copper	mg/kg	5	<5.0
Lead	mg/kg	5	<5.0
Mercury	mg/kg	0.1	<0.10
Nickel	mg/kg	1	<1.0
Zinc	mg/kg	5	<5.0

Sample ID: **Q2023001843**

Sample Name

Parameter	***Units***	***PQL***	Metals Blank Sp-Soil
ESA-MP-01,ICP-01			
Arsenic	%		95
Cadmium	%		94
Chromium	%		91
Copper	%		88
Lead	%		95
Mercury	%		88
Nickel	%		94
Zinc	%		95

Sample ID: **S202300805301**

Sample Name **DSI2.BR1**

Parameter	***Units***	***PQL***	
ESA-P-ORG-07 & 08			
Benzene	%		132
Toluene	%		114
Ethylbenzene	%		105

m.p Xylene	%		95
o Xylene	%		98
Fluorobenzene (Surr.)	%		91

Sample ID: **S202300805302**

Sample Name **DSI2.BR1**

Parameter	*Units*	*PQL*	
ESA-P-ORG(12 - 15)			
Acenaphthene	%		80
Anthracene	%		97
Fluoranthene	%		83
Naphthalene	%		95
Phenanthrene	%		82
Pyrene	%		89
p-Terphenyl-d14 (Surr.)	%		86
aldrin	%		91
endrin	%		66
hexachlorobenzene	%		96
TCMX (Surr.)	%		100
chlorpyrifos	%		76
diazinon	%		80
Aroclor 1016	%		80
2-fluorobiphenyl (Surr.)	%		90

Sample ID: **S202300805303**

Sample Name **DSI2.BR1**

Parameter	*Units*	*PQL*	
ESA-P-ORG(3,8)			
>C10-C16	%		92
>C10-C14	%		89

Sample ID: **S202300805304**

Sample Name **DSI2.BR1**

Parameter	***Units***	***PQL***	
ESA-MP-01,ICP-01			
Arsenic	%		86
Cadmium	%		92
Lead	%		79
Mercury	%		88
Zinc	%		85

Sample ID: **S202300805501**

Sample Name **DSI2.TP201_0.2-0.3**

Parameter	***Units***	***PQL***	
ESA-P-ORG16			
PFBA	%		113
PFPeA	%		121
PFBS	%		92
PFHxA	%		112
PFPeS	%		116
PFHpA	%		85
PFOA	%		118
PFHpS	%		121
PFOS	%		94
PFDA	%		79
PFUdA	%		115
PFDoA	%		113
PFTrDA	%		82
PFTeDA	%		125
PFNA	%		108
PFHxS	%		97
MPFBA (Surr.)	%		108
M3PFBS (Surr.)	%		118
MPFOS (Surr.)	%		111

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MPFHxA (Surr.)	%		106
MPFOA (Surr.)	%		76
MPFUdA (Surr.)	%		102

Sample ID: **S202300815501**

Sample Name

Parameter	*Units*	*PQL*	
ESA-MP-01,ICP-01			
Chromium	%		125
Copper	%		121
Nickel	%		128

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Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

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Accreditation No.14664
Accredited for compliance with ISO/IEC 17025 - Testing.

This Quality Control Report contains results of QAQC samples analysis and the Laboratory Acceptance Criteria.

This report supersedes any previous report(s) with this reference. This document shall not be reproduced, except in full.

This report has been electronically signed by authorised signatories below.

Authorised By

Kaiyu Li

Kaiyu Li

General Comments

Duplicate samples and matrix spike may not be prepared on smaller jobs, however are analysed at frequency. QAQC samples shown within the report as e.g. Batch Blank, Batch Matrix Spike were performed on samples not reported on that Certificate of Analysis.

Blank This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in the same manner as for samples.
Duplicate This is the interlaboratory split of a random sample from the processed batch
Matrix Spike A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class.
Surr. (Surrogate Spike) Surrogates are known additions to each sample, blank and matrix spike or LCS in a batch. Surrogates are chosen as a compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Blank shall be < PQL
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals/PFAS, 60-140% for organics is acceptable. Matrix heterogeneity may result in matrix spike analyses falling outside these limits
RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:
Results <10 times the PQL : No Limit
Results between 10-20 times the PQL : RPD must lie between 0-50%
Results >20 times the PQL : RPD must lie between 0-30%
Surrogate Recoveries : Recoveries must lie between 50-150%

SLS is responsible for all the information in the report, except that provided by the customer.

All sampling information included in the report has been provided by customer.

Information provided by the customer can affect the validity of the results.

Sydney Laboratory Services

Quality Control Report

Contact:	Andrew Hunt	**Date Reported:**	5/04/2023
Customer:	ADE Consulting Group	**No. of Samples:**	26
Address:	Unit 6 7 Millennium Court Silverwater NSW	**Date Received:**	29/03/2023
		Date of Analysis:	29/03/2023

Cust Ref: A101023.0120.00 002 L05

Glossary:

*NATA accreditation does not cover the performance of this service
ND-not detected,
NT-not tested
INS-Insufficient material to perform the test
LCS-Laboratory Control Sample
RPD-Relative Percent Difference
N/A-Not Applicable
< less than
> greater than
PQL- Practical Quantitation Limit
^Analytical result might be compromised due to sample condition or holding time requirements
Reaction rate 1 = Slight
Reaction rate 2 = Moderate
Reaction rate 3 = High
Reaction rate 4 = Vigorous

Sydney Laboratory Services

Quality Control Report

Parameter	Units	PQL	D202300805701 DSI2.TP203_0.1-0.2	D202300810801 WAC349.TP4
ESA-P-ORG16				
PFBA			Pass	Pass
PFPeA			Pass	Pass
PFBS			Pass	Pass
PFHxA			Pass	Pass
PFPeS			Pass	Pass
PFHpA			Pass	Pass
PFOA			Pass	Pass
PFHpS			Pass	Pass
PFOS			Pass	Pass
PFDA			Pass	Pass
PFUdA			Pass	Pass
PFDoA			Pass	Pass
PFTrDA			Pass	Pass
PFTeDA			Pass	Pass
PFNA			Pass	Pass
PFHxS			Pass	Pass
MPFBA	%		78	111
M3PFBS	%		83	78
MPFOS	%		127	91
MPFHxA	%		77	112
MPFOA	%		108	81
MPFUdA	%		75	112

Parameter	Units	PQL	D202300807101 DSI2.TP211_0.5-0.6	D202300809001 DSI1.TP109_0.2-0.3
ESA-P-ORG7 & ORG8				
Benzene			Pass	Pass

Toluene			Pass	Pass
Ethylbenzene			Pass	Pass
m.p Xylene			Pass	Pass
o Xylene			Pass	Pass
Fluorobenzene (Surr.)	%		92	97
C6-C10			Pass	Pass
C6-C9			Pass	Pass

		Sample ID:	**D202300807102**	**D202300809002**
		Sample Name	**DSI2.TP211_0.5-0.6**	**DSI1.TP109_0.2-0.3**
Parameter	*Units*	*PQL*	27/03/2023	Sample Date: 27/03/2023
ESA-P-ORG(12 - 15)				
Acenaphthene			Pass	Pass
Acenaphthylene			Pass	Pass
Anthracene			Pass	Pass
Benzo[a]anthracene			Pass	Pass
Benzo[a]pyrene			Pass	Pass
Benzo[g,h,i]perylene			Pass	Pass
Benzo[b,k]fluoranthene			Pass	Pass
Chrysene			Pass	Pass
Dibenzo[a,h]anthracene			Pass	Pass
Fluoranthene			Pass	Pass
Fluorene			Pass	Pass
Indeno(1,2,3-cd)pyrene			Pass	Pass
Naphthalene			Pass	Pass
Phenanthrene			Pass	Pass
Pyrene			Pass	Pass
p-Terphenyl-d14 (Surr.)	%		108	104
aldrin			Pass	Pass
a-BHC			Pass	Pass
b-BHC			Pass	Pass
d-BHC			Pass	Pass
g-BHC (lindane)			Pass	Pass

cis-chlordane			Pass	Pass
trans-chlordane			Pass	Pass
4,4'-DDD			Pass	Pass
4,4'-DDE			Pass	Pass
4,4'-DDT			Pass	Pass
dieldrin			Pass	Pass
endosulfan I			Pass	Pass
endosulfan II			Pass	Pass
endosulfan sulfate			Pass	Pass
endrin			Pass	Pass
endrin aldehyde			Pass	Pass
endrin ketone			Pass	Pass
heptachlor			Pass	Pass
heptachlor epoxide			Pass	Pass
hexachlorobenzene			Pass	Pass
methoxychlor			Pass	Pass
TCMX (Surr.)	%		74	72
chlorpyrifos			Pass	Pass
chlorpyrifos methyl			Pass	Pass
diazinon			Pass	Pass
fenchlorphos			Pass	Pass
methyl parathion			Pass	Pass
prophos			Pass	Pass
tributylphosphorotrithioite			Pass	Pass
Aroclor 1016			Pass	Pass
Aroclor 1221			Pass	Pass
Aroclor 1232			Pass	Pass
Aroclor 1242			Pass	Pass
Aroclor 1248			Pass	Pass
Aroclor 1254			Pass	Pass
Aroclor 1260			Pass	Pass
2-fluorobiphenyl (Surr.)	%		87	87

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

		Sample ID:	D202300807103	D202300809003
		Sample Name	DSI2.TP211_0.5-0.6	DSI1.TP109_0.2-0.3
Parameter	Units	PQL	27/03/2023	Sample Date: 27/03/2023
ESA-P-ORG(3,8)				
>C10-C16			Pass	Pass
>C16-C34			Pass	Pass
>C34-C40			Pass	Pass
>C10-C14			Pass	Pass
>C15-C28			Pass	Pass
>C29-C36			Pass	Pass

		Sample ID:	D202300807104	D202300809004
		Sample Name	DSI2.TP211_0.5-0.6	DSI1.TP109_0.2-0.3
Parameter	Units	PQL	27/03/2023	Sample Date: 27/03/2023
ESA-MP-01,ICP-01				
Arsenic			Pass	Pass
Cadmium			Pass	Pass
Chromium			Pass	Pass
Copper			Pass	Pass
Lead			Pass	Pass
Mercury			Pass	Pass
Nickel			Pass	Pass
Zinc			Pass	Pass

		Sample ID:	Q2023001822
		Sample Name	
Parameter	Units	PQL	PFAS Blank - Soil
ESA-P-ORG16			
PFBA	ug/kg	5	<5
PFPeA	ug/kg	5	<5
PFBS	ug/kg	5	<5
PFHxA	ug/kg	5	<5
PFPeS	ug/kg	5	<5

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PFHpA	ug/kg	5	<5
PFOA	ug/kg	5	<5
PFHpS	ug/kg	5	<5
PFOS	ug/kg	5	<5
PFDA	ug/kg	5	<5
PFUdA	ug/kg	5	<5
PFDoA	ug/kg	5	<5
PFTrDA	ug/kg	5	<5
PFTeDA	ug/kg	5	<5
PFNA	ug/kg	5	<5
PFHxS	ug/kg	5	<5
MPFBA (Surr.)	%		101
M3PFBS (Surr.)	%		81
MPFOS (Surr.)	%		89
MPFHxA (Surr.)	%		84
MPFOA (Surr.)	%		79
MPFUdA (Surr.)	%		126

Sample ID: **Q2023001823**

Sample Name

Parameter	*Units*	*PQL*	PFAS Blank Sp - Soil
ESA-P-ORG16			
PFBA	%		110
PFPeA	%		122
PFBS	%		97
PFHxA	%		117
PFPeS	%		118
PFHpA	%		91
PFOA	%		125
PFHpS	%		128
PFOS	%		98
PFDA	%		86

PFUdA	%		122
PFDoA	%		125
PFTrDA	%		120
PFTeDA	%		115
PFNA	%		127
PFHxS	%		108
MPFBA (Surr.)	%		88
M3PFBS (Surr.)	%		79
MPFOS (Surr.)	%		115
MPFHxA (Surr.)	%		75
MPFOA (Surr.)	%		73
MPFUdA (Surr.)	%		86

Sample ID: **Q2023001824**

Sample Name

Parameter	*Units*	*PQL*	BTEX Blank - Soil
ESA-P-ORG7 & ORG8			
Benzene	mg/kg	0.5	<0.50
Toluene	mg/kg	0.5	<0.50
Ethylbenzene	mg/kg	1	<1.0
m.p Xylene	mg/kg	2	<2.0
o Xylene	mg/kg	1	<1.0
C6-C10	mg/kg	35	<35
C6-C9	mg/kg	25	<25

Sample ID: **Q2023001825**

Sample Name

Parameter	*Units*	*PQL*	BTEX Blank Sp-Soil
ESA-P-ORG7 & ORG8			
Benzene	%		119
Toluene	%		108
Ethylbenzene	%		98
m.p Xylene	%		95
o Xylene	%		94

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Fluorobenzene (Surr.)	%		87

		Sample ID:	**Q2023001826**
		Sample Name	
Parameter	***Units***	***PQL***	PCB Blank - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	mg/kg	0.3	<0.30
Acenaphthylene	mg/kg	0.3	<0.30
Anthracene	mg/kg	0.3	<0.30
Benzo[a]anthracene	mg/kg	0.3	<0.30
Benzo[a]pyrene	mg/kg	0.3	<0.30
Benzo[g,h,i]perylene	mg/kg	0.3	<0.30
Benzo[b,k]fluoranthene	mg/kg	0.3	<0.30
Chrysene	mg/kg	0.3	<0.30
Dibenzo[a,h]anthracene	mg/kg	0.3	<0.30
Fluoranthene	mg/kg	0.3	<0.30
Fluorene	mg/kg	0.3	<0.30
Indeno(1,2,3-cd)pyrene	mg/kg	0.3	<0.30
Naphthalene	mg/kg	0.3	<0.30
Phenanthrene	mg/kg	0.3	<0.30
Pyrene	mg/kg	0.3	<0.30
aldrin	mg/kg	0.1	<0.10
a-BHC	mg/kg	0.1	<0.10
b-BHC	mg/kg	0.1	<0.10
d-BHC	mg/kg	0.1	<0.10
g-BHC (lindane)	mg/kg	0.1	<0.10
cis-chlordane	mg/kg	0.1	<0.10
trans-chlordane	mg/kg	0.1	<0.10
4,4'-DDD	mg/kg	0.1	<0.10
4,4'-DDE	mg/kg	0.1	<0.10
4,4'-DDT	mg/kg	0.1	<0.10
dieldrin	mg/kg	0.1	<0.10
endosulfan I	mg/kg	0.2	<0.20

endosulfan II	mg/kg	0.2	<0.20
endosulfan sulfate	mg/kg	0.1	<0.10
endrin	mg/kg	0.2	<0.20
endrin aldehyde	mg/kg	0.1	<0.10
endrin ketone	mg/kg	0.1	<0.10
heptachlor	mg/kg	0.1	<0.10
heptachlor epoxide	mg/kg	0.1	<0.10
hexachlorobenzene	mg/kg	0.1	<0.10
methoxychlor	mg/kg	0.1	<0.10
chlorpyrifos	mg/kg	0.1	<0.10
chlorpyrifos methyl	mg/kg	0.1	<0.10
diazinon	mg/kg	0.1	<0.10
fenchlorphos	mg/kg	0.1	<0.10
methyl parathion	mg/kg	0.1	<0.10
prophos	mg/kg	0.1	<0.10
tributylphosphorotrithioite	mg/kg	0.1	<0.10
Aroclor 1016	mg/kg	0.5	<0.50
Aroclor 1221	mg/kg	0.5	<0.50
Aroclor 1232	mg/kg	0.5	<0.50
Aroclor 1242	mg/kg	0.5	<0.50
Aroclor 1248	mg/kg	0.5	<0.50
Aroclor 1254	mg/kg	0.5	<0.50
Aroclor 1260	mg/kg	0.5	<0.50

		Sample ID:	**Q2023001827**
		Sample Name	
Parameter	***Units***	***PQL***	PCB Blank Sp - Soil
ESA-P-ORG(12 - 15)			
Acenaphthene	%		97
Anthracene	%		100
Fluoranthene	%		92
Naphthalene	%		103
Phenanthrene	%		97

Pyrene	%		94
p-Terphenyl-d14 (Surr.)	%		105
aldrin	%		106
endrin	%		98
hexachlorobenzene	%		89
TCMX (Surr.)	%		76
chlorpyrifos	%		107
diazinon	%		91
2-fluorobiphenyl (Surr.)	%		91
Aroclor 1016	%		102

Sample ID: **Q2023001828**

Sample Name

Parameter	***Units***	***PQL***	TRH Blank-Soil
ESA-P-ORG(3,8)			
>C10-C16	mg/kg	50	<50
>C16-C34	mg/kg	100	<100
>C34-C40	mg/kg	100	<100
>C10-C14	mg/kg	50	<50
>C15-C28	mg/kg	100	<100
>C29-C36	mg/kg	100	<100

Sample ID: **Q2023001829**

Sample Name

Parameter	***Units***	***PQL***	TRH Blank Spike-Soil
ESA-P-ORG(3,8)			
>C10-C16	%		98
>C10-C14	%		93

Sample ID: **Q2023001844**

Sample Name

Parameter	***Units***	***PQL***	Metals Blank - Soil
ESA-MP-01,ICP-01			
Arsenic	mg/kg	5	5.0

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Cadmium	mg/kg	0.3	<0.30
Chromium	mg/kg	1	<1.0
Copper	mg/kg	5	<5.0
Lead	mg/kg	5	<5.0
Mercury	mg/kg	0.1	<0.10
Nickel	mg/kg	1	<1.0
Zinc	mg/kg	5	<5.0

Sample ID: **Q2023001845**

Sample Name

Parameter	***Units***	***PQL***	Metals Blank Sp-Soil
ESA-MP-01,ICP-01			
Arsenic	%		95
Cadmium	%		94
Chromium	%		91
Copper	%		88
Lead	%		95
Mercury	%		88
Nickel	%		94
Zinc	%		95

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Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Sample ID: S202300805501

Sample Name DSI2.TP201_0.2-0.3

Parameter	*Units*	*PQL*	
ESA-P-ORG16			
PFBA	%		113
PFPeA	%		121
PFBS	%		92
PFHxA	%		112
PFPeS	%		116
PFHpA	%		85
PFOA	%		118
PFHpS	%		121
PFOS	%		94
PFDA	%		79
PFUdA	%		115
PFDoA	%		113
PFTrDA	%		82
PFTeDA	%		125
PFNA	%		108
PFHxS	%		97
MPFBA (Surr.)	%		108
M3PFBS (Surr.)	%		118
MPFOS (Surr.)	%		111
MPFHxA (Surr.)	%		106
MPFOA (Surr.)	%		76
MPFUdA (Surr.)	%		102

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Sample ID: **S202300807001**

Sample Name **DSI2.TP211_0.1-0.2**

Parameter	***Units***	***PQL***	
ESA-P-ORG-07 & 08			
Benzene	%		124
Toluene	%		111
Ethylbenzene	%		101
m.p Xylene	%		91
o Xylene	%		94
Fluorobenzene (Surr.)	%		90

Sample ID: **S202300807002**

Sample Name **DSI2.TP211_0.1-0.2**

Parameter	***Units***	***PQL***	Sample Date: 27/03/2023
ESA-P-ORG(12 - 15)			
Acenaphthene	%		90
Anthracene	%		94
Fluoranthene	%		94
Naphthalene	%		94
Phenanthrene	%		96
Pyrene	%		96
p-Terphenyl-d14 (Surr.)	%		104
aldrin	%		99
endrin	%		92
hexachlorobenzene	%		82
TCMX (Surr.)	%		68
chlorpyrifos	%		104
diazinon	%		86
Aroclor 1016	%		103
2-fluorobiphenyl (Surr.)	%		82

Batch Number : 2301194

Report Number : A101023.0120.00 (070-079)

Sample ID: **S202300807003**

Sample Name **DSI2.TP211_0.1-0.2**

Parameter	*Units*	*PQL*	Sample Date: 27/03/2023
ESA-P-ORG(3,8)			
>C10-C16	%		91
>C10-C14	%		88

Sample ID: **S202300807004**

Sample Name **DSI2.TP211_0.1-0.2**

Parameter	*Units*	*PQL*	Sample Date: 27/03/2023
ESA-MP-01,ICP-01			
Chromium	%		123
Mercury	%		85
Nickel	%		118
Zinc	%		124

Sample ID: **S202300815502**

Sample Name

Parameter	*Units*	*PQL*	
ESA-MP-01,ICP-01			
Arsenic	%		112
Cadmium	%		124
Copper	%		112
Lead	%		121

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Analysis report: A101023.0120.00

Laboratory LOT NO: 2301193

Date Received: 28.03.2023
Date Analysed: 30.03.2023
Report Date: 30.03.2023
Client: ADE Consulting Group
Job Location: As Received
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

*Asbestos identification as per "National Environment Protection (Assessment of site contamination) Measure, Schedule B1" and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" is not coverd by NATA scope of accreditation

Analysis performed by:

Michelle Ogilvie
Approved asbestos identifier

Results Authorised By:

Grace (Weichen) Jia
Approved Signatory

General Comments:

Sydney Laboratory Services is responsible for all the information in the report, except that provided by the customer. All sampling information included in the report has been provided by the client

Sample analysed as received.
Samples are stored for minimum period of 1 month if longer time is not advised by client.
Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.01g/kg (0.001% w/w) for friable asbestos and 0.1g/kg (0.01% w/w) for bonded asbestos.
This form of analysis is outside the scope of NATA accreditation.
Bonded asbestos containing material (bonded ACM) : Bonded ACM comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin.This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
Fibrous asbestos (FA): FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
Asbestos fines (AF): AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.
Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI2.TP201_0.2-0.3	2023008055	Granulated dark soil with rocks	500 ml	610 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP203_0.1-0.2	2023008057	Granulated dark soil with rocks	500 ml	512 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP209_0.5-0.6	2023008059	Granulated dark soil with rocks	500 ml	783 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP213_0.2-0.3	2023008061	Granulated dark soil with rocks	500 ml	710 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP215_0.2-0.3	2023008063	Granulated dark soil with rocks	500 ml	610 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP236_0.3-0.4	2023008068	Granulated dark soil with rocks	500 ml	737 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

Sydney Laboratory Services

Sydney Laboratory Services

A division of A. D. Envirotech Australia Pty Ltd
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

A.B.N. 52 093 452 950

Analysis report: A101023.0120.00

Laboratory LOT NO: 2301194

Date Received: 28.03.2023
Date Analysed: 30.03.2023
Report Date: 30.03.2023
Client: ADE Consulting Group
Job Location: As Received
Analytical method: Polarised Light Microscopy with dispersion staining (ADE method ABI)

*Asbestos identification as per "National Environment Protection (Assessment of site contamination) Measure, Schedule B1" and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" is not coverd by NATA scope of accreditation

Analysis performed by:

Michelle Ogilvie
Approved asbestos identifier

Results Authorised By:

Grace (Weichen) Jia
Approved Signatory

General Comments:

Sydney Laboratory Services is responsible for all the information in the report, except that provided by the customer. All sampling information included in the report has been provided by the client

Sample analysed as received.
Samples are stored for minimum period of 1 month if longer time is not advised by client.
Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.01g/kg (0.001% w/w) for friable asbestos and 0.1g/kg (0.01% w/w) for bonded asbestos.
This form of analysis is outside the scope of NATA accreditation.
Bonded asbestos containing material (bonded ACM) : Bonded ACM comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin.This term is restricted to material that cannot pass a 7 mm x 7 mm sieve.
Fibrous asbestos (FA): FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
Asbestos fines (AF): AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.
Note: The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Client Sample ID.	Laboratory Sample No.	Sample Description/Matrix	Sample Dimensions (cm) unless stated otherwise	Weight (Dry Weight)	Trace Analysis Completed Y/N	Result	Comments
DSI2.TP211_0.1-0.2	2023008070	Granulated dark soil with rocks	500 ml	619 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP219_0.2-0.3	2023008072	Granulated dark soil with rocks	500 ml	672 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP229_0.2-0.3	2023008076	Granulated dark soil with rocks	500 ml	543 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil
DSI2.TP239_0.2-0.3	2023008079	Granulated dark soil with rocks	500 ml	612 grams	Yes, no trace asbestos detected by polarized light microscopy including dispersion staining.	No Chrysotile asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Amosite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Crocidolite asbestos detected by polarized light microscopy including dispersion staining.	Nil
						No Synthetic Mineral Fibres detected by polarized light microscopy including dispersion staining.	Nil
						Organic fibres detected by polarized light microscopy including dispersion staining.	Nil

Sydney Laboratory Services

A division of A. D. Envirotech Australia Pty Ltd
A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

CLIENT DETAILS

Client	ADE Consulting Group
Contact	Andrew Hunt, Linda Lenhian, Santo Ragusa
Samplers	Monique Hitchens, Chris Navaratnam

SAMPLE RECEIPT DETAILS

Project Number	A101023.0120.00/002/L05
SLS Reference	2301193
Number of samples	19
Date samples received	28.03.2023
Time samples received	5:15 PM
Samples Received By	Krista Johnston
Temperature upon receipt (°C)	N/A
Turn Around Time requested	5 Working Days
Expected Report Date	**05.04.2023**

CONDITION OF SAMPLES UPON RECEIVAL

No errors in COC provided.	✓
All samples were received in good condition.	✓
Evidence of chilling for samples.	✓
Appropriate use of sample containers have been used.	✓
Samples were delivered within holding time of analysis requested.	✓
Samples to be tested for volatiles received with zero headspace.	✓
Custody Seal intact (if used)	N/A

COMMENTS

This Report Contains:
Sample receipt non-conformities.
Summary of samples and requested analysis.
Requested report deliverables.

CONTACT US FOR ANY QUERIES

If you have any questions with respect to these samples please contact:

Email	sls@ade.group	Contact	Krista Johnston
Phone	(+61) 0451 524 289	Signed	

Sydney Laboratory Services

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A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

INFORMATION SUMMARY

SLS Reference	2301193
Project Number	A101023.0120.00/002/L05
Client	ADE Consulting Group
Contact	Andrew Hunt, Linda Lenhian, Santo Ragusa
Samplers	Monique Hitchens, Chris Navaratnam

ANALYSIS UNDERWAY - Details of the following samples

SUMMARY OF SAMPLES AND ANALYSIS REQUESTED

Laboratory Sample ID	Sampling Date	Client Sample ID	SL01	OH07 - Asbestos 500ml NEPM	PS02 - PFAS	NEPM HOLD	HOLD
2023008053	27.03.2023	DSI2.BR1	X				
2023008054	27.03.2023	DSI2.BR2	X				
2023008055	27.03.2023	DSI2.TP201_0.2-0.3	X	X	X		
2023008056	27.03.2023	DSI2.TP201_0.5-0.6	X				
	27.03.2023	DSI2.TP202_0.1-0.2					X
2023008057	27.03.2023	DSI2.TP203_0.1-0.2	X	X	X		
2023008058	27.03.2023	DSI2.TP206_0.2-0.3	X			X	X
2023008059	27.03.2023	DSI2.TP209_0.5-0.6	X	X			
2023008060	27.03.2023	DSI2.TP210_0.2-0.3	X			X	X
2023008061	27.03.2023	DSI2.TP213_0.2-0.3	X	X	X		
2023008062	27.03.2023	DSI2.TP213_0.7-0.8	X				
2023008063	27.03.2023	DSI2.TP215_0.2-0.3	X	X			
2023008064	27.03.2023	DSI2.TP215_1.2-1.3	X			X	X
2023008065	27.03.2023	DSI2.TP216_0.4-0.6	X			X	X
2023008066	27.03.2023	DSI2.TP234_0.3-0.4	X			X	X
2023008067	27.03.2023	DSI2.TP234_0.6-0.7	X			X	X
	27.03.2023	DSI2.TP235_0.3-0.4					X
2023008068	27.03.2023	DSI2.TP236_0.3-0.4	X	X	X		
2023008069	27.03.2023	DSI2.TP236_0.8-0.9	X				

Sydney Laboratory Services

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CLIENT DETAILS

Client	ADE Consulting Group
Contact	Andrew Hunt, Linda Lenhian, Santo Ragusa
Samplers	Monique Hitchens, Chris Navaratnam

SAMPLE RECEIPT DETAILS

Project Number	A101023.0120.00/002/L05
SLS Reference	2301194
Number of samples	11
Date samples received	28.03.2023
Time samples received	5:15 PM
Samples Received By	Krista Johnston
Temperature upon receipt (°C)	N/A
Turn Around Time requested	5 Working Days
Expected Report Date	**05.04.2023**

CONDITION OF SAMPLES UPON RECEIVAL

No errors in COC provided.	✓
All samples were received in good condition.	✓
Evidence of chilling for samples.	✓
Appropriate use of sample containers have been used.	✓
Samples were delivered within holding time of analysis requested.	✓
Samples to be tested for volatiles received with zero headspace.	✓
Custody Seal intact (if used)	N/A

COMMENTS

This Report Contains:
Sample receipt non-conformities.
Summary of samples and requested analysis.
Requested report deliverables.

CONTACT US FOR ANY QUERIES

If you have any questions with respect to these samples please contact:

Email	sls@ade.group	Contact	Krista Johnston
Phone	(+61) 0451 524 289	Signed	

Sydney Laboratory Services

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A.C.N. 093 452 950
Unit 4/10-11 Millennium Court,
Silverwater 2128
Ph: (02) 9648-6669

INFORMATION SUMMARY

SLS Reference	2301194
Project Number	A101023.0120.00/002/L05
Client	ADE Consulting Group
Contact	Andrew Hunt, Linda Lenhian, Santo Ragusa
Samplers	Monique Hitchens, Chris Navaratnam

ANALYSIS UNDERWAY - Details of the following samples

			SUMMARY OF SAMPLES AND ANALYSIS REQUESTED				
Laboratory Sample ID	Sampling Date	Client Sample ID	SL01	OH07 - Asbestos 500ml NEPM	PS02 - PFAS	NEPM HOLD	HOLD
	27.03.2023	DSI2.TP207_0.2-0.3					X
2023008070	27.03.2023	DSI2.TP211_0.1-0.2	X	X			
2023008071	27.03.2023	DSI2.TP211_0.5-0.6	X				
2023008072	28.03.2023	DSI2.TP219_0.2-0.3	X	X			
2023008073	28.03.2023	DSI2.TP221_0.1-0.2	X				
2023008074	28.03.2023	DSI2.TP225_0.4-0.5	X				
2023008075	28.03.2023	DSI2.TP227_0.3-0.4	X				
2023008076	28.03.2023	DSI2.TP229_0.2-0.3	X	X			
2023008077	28.03.2023	DSI2.TP231_0.1-0.2	X				
2023008078	28.03.2023	DSI2.TP233_0.4-0.5	X			X	
2023008079	28.03.2023	DSI2.TP239_0.2-0.3	X	X	X		

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Document Revision Date: 22/08/2022

ESA-F-02 COC - Chain Of Custody (Internal: Sydney Laboratory Services)

FULL PROJECT NUMBER	A101023.0120.00
PROJECT PHASE	002
PROJECT TASK	L05
SAMPLES DELIVERED BY:	ADE Consulting Group 6/7 Millennium Ct, Silverwater NSW 2128
SAMPLERS:	Chris Navaratnam, Monique Hitchens
TURNAROUND (BUSINESS DAY - BD):	SAME DAY: ☐ 24 hr: 2-BD: ☐ 3-BD: ☐ 5 BD (STD): XX
SAMPLING DATE:	28.03.2023
AFTER TEST STORAGE:	ROOM TEMP: ☐ FRIDGE: ☐ FREEZER: ☐ > >4 WEEKS: ☐ OTHER: ☐
REPORT FORMAT:	HARD COPY: ☐ E-MAIL: X
CONSULTANTS SIGNATURE:	CONSULTANTS EMAIL: monique.hitchens@ade.group; chris.navaratnam@ade.group
PROJECT MANAGERS SIGNATURE:	PROJECT MANAGERS E-MAIL: andrew.hunt@ade.group, linda.lenihan@ade.group, santo.ragusa@ade.group

LABORATORY REFERENCE NO. (Lab use ONLY):	A101023.0120.00/002/L05
RECEIVED BY: KS	SIGNATURE:
SAMPLES: 19 CHILLED: ☑ PRESERVED: ☐	PRESERVATION METHOD: ☐ CUSTODY SEAL INTACT: ☐
MINIMAL HEADSPACE : ☑	WITHIN HOLDING TIME: ☑
DATE: 28/3/23	TIME: 5:15 PM TEMPERATURE UPON RECEIPT: °C
LIMS LOT NO. 2301193	LIMS/EXCEL SIGNATURE: COMMENTS:

NOTES

POTENTIAL HAZARDOUS CONTAMINANTS:

☐ ASBESTOS ☐ HYDROCARBONS
☐ LEAD/ARSENIC ☐ NO KNOWN CONTAMINATION
☐ OTHER:_______

LAB PLEASE *EMAIL COC RECEIPT: ☐

Sample Comments

Please use PFAS LOR of 5µg/kg

SAMPLE DATA / CONTAINER DATA / ANALYSES REQUIRED

LIMS Sample ID (Lab Use) 2023008	Sample ID (ADE)	MATRIX	SAMPLE DATE	TYPE & PRESERVATIVE	NO. OF SAMPLE CONTAINERS	SLO1	Asbestos 500ml	Asbestos Bulk	PFAS Short Suite	on hold	PFAS on hold	Asbestos 500mL on hold
053	DSI2.BR1	Soil	27.03.2023	G	1	X						
054	DSI2.BR2	Soil	27.03.2023	G	1	X						
055	DSI2.TP201_0.2-0.3	Soil	27.03.2023	G+P	2	X	X		X			
056	DSI2.TP201_0.5-0.6	Soil	27.03.2023	G	1	X						
-	DSI2.TP202_0.1-0.2	Soil	27.03.2023	G+P	2					X		
057	DSI2.TP203_0.1-0.2	Soil	27.03.2023	G+P	2	X	X		X			
058	DSI2.TP206_0.2-0.3	Soil	27.03.2023	G+P	2	X						X
059	DSI2.TP209_0.5-0.6	Soil	27.03.2023	G+P	2	X	X					
060	DSI2.TP210_0.2-0.3	Soil	27.03.2023	G+P	2	X						
061	DSI2.TP213_0.2-0.3	Soil	27.03.2023	G+P	2	X	X		X			
062	DSI2.TP213_0.7-0.8	Soil	27.03.2023	G	1	X						
063	DSI2.TP215_0.2-0.3	Soil	27.03.2023	G+P	2	X	X					
064	DSI2.TP215_1.2-1.3	Soil	27.03.2023	G+P	2	X						X
065	DSI2.TP216_0.4-0.6	Soil	27.03.2023	G+P	2	X						X
066	DSI2.TP234_0.3-0.4	Soil	27.03.2023	G+P	2	X						X
067	DSI2.TP234_0.6-0.7	Soil	27.03.2023	G+P	2	X						X
	DSI2.TP235_0.3-0.4	Soil	27.03.2023	G+P	2					X		
068	DSI2.TP236_0.3-0.4	Soil	27.03.2023	G+P	2	X	X		X			
069	DSI2.TP236_0.8-0.9	Soil	27.03.2023	G	1	X						

Comments:

Container Type and Preservative: P = Unpreserved Plastic; PN = Nitric Preserved Plastic; ORC = Nitric P

VB = Vial Sodium Bisulphate Preserved; VS = Vial Sulfuric Preserved; V = Unpreserved Vial; G = Amber Gl

E = EDTA Preserved Bottle; ST = Sterile Bottle; J = Unpreserved Glass Jar; ASS = Plastic Bag for Acid Sulfat

Due: 05.04.23

ADE CONSULTING GROUP
SOLUTIONS THROUGH INNOVATION

ESA-F-02
Chain of Custody (Internal)

Date Printed: 28/03/2023

80 10

Document Revision Date: 22/08/2022

ESA-F-02 COC - Chain Of Custody (Internal: Sydney Laboratory Services)

ADE CONSULTING GROUP

FULL PROJECT NUMBER	A101023.0120.00
PROJECT PHASE	002
PROJECT TASK	L05
SAMPLES DELIVERED BY:	ADE Consulting Group 6/7 Millennium Ct, Silverwater NSW 2128
SAMPLERS:	Chris Navaratnam, Monique Hitchens
TURNAROUND (BUSINESS DAY - BD):	SAME DAY: ☐ 24 hr: 2-BD: ☐ 3-BD: ☐ 5 BD (STD): XX
SAMPLING DATE:	28.03.2023
AFTER TEST STORAGE:	ROOM TEMP: ☐ FRIDGE: XX FREEZER: ☐ > >4 WEEKS: ☐ OTHER: ☐
REPORT FORMAT:	HARD COPY: ☐ E-MAIL: X
CONSULTANTS SIGNATURE:	CONSULTANTS EMAIL: monique.hitchens@ade.group; chris.navaratnam@ade.group
PROJECT MANAGERS SIGNATURE:	PROJECT MANAGERS E-MAIL: andrew.hunt@ade.group, linda.lenihan@ade.group, santo.ragusa@ade.group

LABORATORY REFERENCE NO. (Lab use ONLY): A101023.0120.00/002/L05

RECEIVED BY: KT
SIGNATURE:
SAMPLES: 11 | CHILLED: ☑ | PRESERVED: ☐ | PRESERVATION METHOD: ☐ | CUSTODY SEAL INTACT: ☐
MINIMAL HEADSPACE: ☑ | WITHIN HOLDING TIME: ☑
DATE: 28/3/23 | TIME: 5:15 PM | TEMPERATURE UPON RECEIPT: °C
LIMS LOT NO. 2301194 | LIMS/EXCEL SIGNATURE: | COMMENTS: ~~Extra Bag TP233 0.4-0.5~~ KJ

NOTES

POTENTIAL HAZARDOUS CONTAMINANTS:
☐ ASBESTOS ☐ HYDROCARBONS
☐ LEAD/ARSENIC ☐ NO KNOWN CONTAMINATION
☐ OTHER:______
LAB PLEASE *EMAIL COC RECEIPT: ☐

Sample Comments

Please use PFAS LOR of 5µg/kg

LIMS Sample ID (Lab Use) 2023008	Sample ID (ADE)	MATRIX	SAMPLE DATE	TYPE & PRESERVATIVE	NO. OF SAMPLE CONTAINERS	SLO1	Asbestos 500ml	Asbestos Bulk	PFAS Short Suite	on hold	PFAS on hold	Asbestos 500mL on hold
	DSI2.TP207_0.2-0.3	Soil	27.03.2023	G+P	2					X		
070	DSI2.TP211_0.1-0.2	Soil	27.03.2023	G+P	2	X	X					
071	DSI2.TP211_0.5-0.6	Soil	27.03.2023	G	1	X						
072	DSI2.TP219_0.2-0.3	Soil	28.03.2023	G+P	2	X	X					
073	DSI2.TP221_0.1-0.2	Soil	28.03.2023	G	1	X						
074	DSI2.TP225_0.4-0.5	Soil	28.03.2023	G	1	X						
075	DSI2.TP227_0.3-0.4	Soil	28.03.2023	G	1	X						
076	DSI2.TP229_0.2-0.3	Soil	28.03.2023	G+P	2	X	X					
077	DSI2.TP231_0.1-0.2	Soil	28.03.2023	G	1	X						
078	DSI2.TP233_0.4-0.5	Soil	28.03.2023	G	1	X						X
079	DSI2.TP239_0.2-0.3	Soil	28.03.2023	G+P	2	X	X		X			

Comments:

Container Type and Preservative: P = Unpreserved Plastic; PN = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; PNA = Sodium Hydroxide Preserved Plastic; PC = HCl preserved Plastic; VC = Vial HCl Preserved; SP = Sulfuric Preserved Plastic; VB = Vial Sodium Bisulphate Preserved; VS = Vial Sulfuric Preserved; V = Unpreserved Vial; G = Amber Glass Unpreserved; SG = Sulfuric Preserved Amber Glass; F = Formaldehyde Preserved Glass; HS = HCl preserved Speciation bottle; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; J = Unpreserved Glass Jar; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag.

Due: 05.04.03

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

CERTIFICATE OF ANALYSIS 319690

Client Details	
Client	ADE CONSULTING GROUP PTY LTD
Attention	Monique Hitchens, Andrew Hunt, Chris Navaratnam
Address	Unit 6, 7 Millenium Court, Silverwater, NSW, 2128

Sample Details	
Your Reference	**A101023.0120.002.L21**
Number of Samples	2 Soil
Date samples received	28/03/2023
Date completed instructions received	28/03/2023

Analysis Details

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

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

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

Report Details	
Date results requested by	05/04/2023
Date of Issue	31/03/2023
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vTRH(C6-C10)/BTEXN in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	108

svTRH (C10-C40) in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	29/03/2023	30/03/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	90	90

PAHs in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	115	113

Organochlorine Pesticides in soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	98	98

Organophosphorus Pesticides in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	98	98

PCBs in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	98	98

Acid Extractable metals in soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date prepared	-	29/03/2023	29/03/2023
Date analysed	-	29/03/2023	29/03/2023
Arsenic	mg/kg	7	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	20	20
Copper	mg/kg	19	21
Lead	mg/kg	39	36
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	10	9
Zinc	mg/kg	38	32

Moisture			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date prepared	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Moisture	%	11	11

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	92	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	92	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	85	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	92	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	90	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	97	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	101	[NT]
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	101	1	96	104	8	102	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	135	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	122	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	[NT]
TRH $>C_{10}$ -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	135	[NT]
TRH $>C_{16}$ -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	122	[NT]
TRH $>C_{34}$ -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	[NT]
Surrogate o-Terphenyl	%		Org-020	89	1	90	88	2	99	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	86	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	111	1	115	115	0	107	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	135	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	100	1	98	98	0	97	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	131	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	140	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	130	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	134	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	129	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	100	1	98	98	0	97	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	122	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	100	1	98	98	0	97	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	7	6	15	99	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	88	[NT]
Chromium	mg/kg	1	Metals-020	<1	1	20	18	11	95	[NT]
Copper	mg/kg	1	Metals-020	<1	1	19	19	0	103	[NT]
Lead	mg/kg	1	Metals-020	<1	1	39	33	17	94	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	110	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	10	9	11	94	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	38	45	17	95	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

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CERTIFICATE OF ANALYSIS 319757

Client Details	
Client	ADE CONSULTING GROUP PTY LTD
Attention	Monique Hitchens
Address	Unit 6, 7 Millenium Court, Silverwater, NSW, 2128

Sample Details	
Your Reference	A101023.0120.00 002 L04
Number of Samples	1 Soil
Date samples received	29/03/2023
Date completed instructions received	29/03/2023

Analysis Details

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

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

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

Report Details	
Date results requested by	05/04/2023
Date of Issue	31/03/2023

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

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Loren Bardwell, Development Chemist

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	97

svTRH (C10-C40) in Soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	30/03/2023
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	88

PAHs in Soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	89

Organochlorine Pesticides in soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	97

Organophosphorus Pesticides in Soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
Dichlorvos	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Diazinon	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Malathion	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Parathion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1
Surrogate TCMX	%	97

PCBs in Soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date extracted	-	30/03/2023
Date analysed	-	31/03/2023
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	97

Acid Extractable metals in soil		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date prepared	-	30/03/2023
Date analysed	-	30/03/2023
Arsenic	mg/kg	5
Cadmium	mg/kg	<0.4
Chromium	mg/kg	61
Copper	mg/kg	45
Lead	mg/kg	200
Mercury	mg/kg	<0.1
Nickel	mg/kg	50
Zinc	mg/kg	79

Moisture		
Our Reference		319757-1
Your Reference	UNITS	DSI2_SR1
Date Sampled		28/03/2023
Type of sample		Soil
Date prepared	-	30/03/2023
Date analysed	-	31/03/2023
Moisture	%	11

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	101	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	101	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	102	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	113	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	100	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	97	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	96	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	96	[NT]	[NT]	[NT]	[NT]	106	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	84	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	102	[NT]	[NT]	[NT]	[NT]	89	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	100	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	112	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	71	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	82	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	68	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	79	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	64	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			31/03/2023	[NT]	[NT]	[NT]	[NT]	31/03/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	65	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate TCMX	%		Org-021	95	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date prepared	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Date analysed	-			30/03/2023	[NT]	[NT]	[NT]	[NT]	30/03/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	120	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	115	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	120	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	125	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

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

SAMPLE RECEIPT ADVICE

Client Details	
Client	ADE CONSULTING GROUP PTY LTD
Attention	Monique Hitchens

Sample Login Details	
Your reference	A101023.0120.00 002 L04
Envirolab Reference	319757
Date Sample Received	29/03/2023
Date Instructions Received	29/03/2023
Date Results Expected to be Reported	05/04/2023

Sample Condition	
Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	13
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Nil

Please direct any queries to:

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

Analysis Underway, details on the following page:

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

Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Acid Extractable metalsin soil
DSI2_SR1	✓	✓	✓	✓	✓	✓	✓

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

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

CHAIN OF CUSTODY FORM - Client

ENVIROLAB GROUP National phone number 1300 424 344
ENVIROLAB GROUP National phone number 1300 424 344

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
02 9910 6200 | sydney@envirolab.com.au

Perth Lab - MPL Laboratories
16-18 Hayden Crt, Myaree, WA 6154
08 9317 2505 | lab@mpl.com.au

Melbourne Lab - Envirolab Services
25 Research Drive, Croydon South, VIC 3136
03 9763 2500 | melbourne@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
08 7087 6800 | adelaide@envirolab.com.au

Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
07 3266 9532 | brisbane@envirolab.com.au

Darwin Office - Envirolab Services
Unit 20/119 Reichardt Road, Winnellie, NT 0820
08 8967 1201 | darwin@envirolab.com.au

Client: ADE Consulting group	Client Project Name/Number/Site etc (ie report title): A101023.0120.002.L21
Contact Person: Andrew Hiunt	
Project Mgr: Andrew Hunt	PO No.: A101023.0120.002.L21
Sampler: Chris Navaratnam	Envirolab Quote No. :
Address: Unit 6/7 Millenium Court Silverwater NSW 2128	Date results required: 05.03.2023 Or choose: standard / same day / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Phone: Mob: 0405 685 962	Additional report format: esdat / equis /
Email: chris.navaratnam@ade.group andrew.hunt@ade.group monique.hitchens@ade.group	Lab Comments:

Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	Combination 6																Provide as much information about the sample as you can
	DSI2.SR1	-	27.03.2023	Soil	x																
	DSI2.SR2	-	28.03.2023	Soil	x																

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

Relinquished by (Company):	Received by (Company): ELS-SYD	*Lab Use Only*	
Print Name: Chris Navaratnam	Print Name: Christine	Job number: 319690	Cooling: Ice / Ice pack / None
Date & Time: 28/03/23 @ 15:45	Date & Time: 28/03/23 1730	Temperature: 4C	Security seal: Intact / Broken / None
Signature:	Signature:	TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

Document Revision Date: 22/08/2022

ESA-F-02 COC - Chain Of Custody (External: Envirolab)

FULL PROJECT NUMBER	A101023.0120.00	LABORATORY REFERENCE NO. (Lab use ONLY):	319757
PROJECT PHASE	002		
PROJECT TASK	104		
SAMPLES DELIVERED BY:	ADE Consulting Group 6/7 Millennium Ct, Silverwater NSW 2128	RECEIVED BY: CM	SIGNATURE: CM
SAMPLERS:	Chris Navaratnam, Monique Hitchens	SAMPLES: CHILLED: ☑ PRESERVED: ☑	PRESERVATION METHOD: ☐ ice CUSTODY SEAL INTACT: ☑
TURNAROUND (BUSINESS DAY - BD):	SAME DAY: ☐ 24 hr: 2-BD: ☐ 3-BD: ☐ 5 BD (STD): XX	MINIMAL HEADSPACE : ☐	WITHIN HOLDING TIME: ☐
SAMPLING DATE:	28.03.2023	DATE: 29/3 TIME: 1310	TEMPERATURE UPON RECEIPT: 13. °C
AFTER TEST STORAGE:	ROOM TEMP: ☐ FRIDGE: ☐ FREEZER: ☐ >>4 WEEKS: ☐ OTHER: ☐	LIMS LOT NO.	LIMS/EXCEL SIGNATURE: COMMENTS:
REPORT FORMAT:	HARD COPY: ☐ E-MAIL: X		
CONSULTANTS SIGNATURE:	CONSULTANTS EMAIL: monique.hitchens@ade.group; chris.navaratnam@ade.group		
PROJECT MANAGERS SIGNATURE:	PROJECT MANAGERS E-MAIL: andrew.hunt@ade.group, linda.lenihan@ade.group, santo.ragusa@ade.group		

NOTES

POTENTIAL HAZARDOUS CONTAMINANTS:

☐ ASBESTOS ☐ HYDROCARBONS
☐ LEAD/ARSENIC ☐ NO KNOWN CONTAMINATION
☐ OTHER:_______

LAB PLEASE *EMAIL COC RECEIPT: ☐

SAMPLE DATA				CONTAINER DATA		ANALYSES REQUIRED							NOTES
LIMS Sample ID (Lab Use)	Sample ID (ADE)	MATRIX	SAMPLE DATE	TYPE & PRESERVATIVE	NO. OF SAMPLE CONTAINERS	Combination 6	Asbestos 500ml	Asbestos Bulk	PFAS Short Suite	on hold	PFAS on hold	Asbestos 500mL on hold	Sample Comments
1	DSI2_SR1	soil	28.03.2023	G	1	x							Please use PFAS LOR of 5ug/kg

Comments:

Container Type and Preservative: P = Unpreserved Plastic; PN = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; PNA = Sodium Hydroxide Preserved Plastic; PC = HCl preserved Plastic; VC = Vial HCl Preserved; SP = Sulfuric Preserved Plastic;
VB = Vial Sodium Bisulphate Preserved; VS = Vial Sulfuric Preserved; V = Unpreserved Vial; G = Amber Glass Unpreserved; SG = Sulfuric Preserved Amber Glass; F = Formaldehyde Preserved Glass; HS = HCl preserved Speciation bottle; Z = Zinc Acetate Preserved Bottle;
E = EDTA Preserved Bottle; ST = Sterile Bottle; J = Unpreserved Glass Jar; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag.

Page 1 of 1

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
Naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	108

svTRH (C10-C40) in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	29/03/2023	30/03/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	90	90

PAHs in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	115	113

Organochlorine Pesticides in soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
alpha-BHC	mg/kg	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Surrogate TCMX	%	98	98

Organophosphorus Pesticides in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	98	98

PCBs in Soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date extracted	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1
Surrogate TCMX	%	98	98

Acid Extractable metals in soil			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date prepared	-	29/03/2023	29/03/2023
Date analysed	-	29/03/2023	29/03/2023
Arsenic	mg/kg	7	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	20	20
Copper	mg/kg	19	21
Lead	mg/kg	39	36
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	10	9
Zinc	mg/kg	38	32

Moisture			
Our Reference		319690-1	319690-2
Your Reference	UNITS	DS12.SR1	DS12.SR2
Date Sampled		27/03/2023	28/03/2023
Type of sample		Soil	Soil
Date prepared	-	29/03/2023	29/03/2023
Date analysed	-	30/03/2023	30/03/2023
Moisture	%	11	11

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022	Determination of VOCs sampled onto coconut shell charcoal sorbent tubes, that can be desorbed using carbon disulphide, and analysed by GC-MS.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	92	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	92	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	85	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	92	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	90	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	97	[NT]
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	101	[NT]
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	101	1	96	104	8	102	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	135	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	122	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	135	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	122	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	114	[NT]
Surrogate o-Terphenyl	%		Org-020	89	1	90	88	2	99	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	96	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	103	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	86	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	111	1	115	115	0	107	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	94	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	93	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	105	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	135	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	92	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	100	1	98	98	0	97	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	131	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	102	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	140	[NT]
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	130	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	134	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	129	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	100	1	98	98	0	97	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date extracted	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			30/03/2023	1	30/03/2023	30/03/2023		30/03/2023	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	122	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	100	1	98	98	0	97	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	[NT]
Date prepared	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Date analysed	-			29/03/2023	1	29/03/2023	29/03/2023		29/03/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	1	7	6	15	99	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	88	[NT]
Chromium	mg/kg	1	Metals-020	<1	1	20	18	11	95	[NT]
Copper	mg/kg	1	Metals-020	<1	1	19	19	0	103	[NT]
Lead	mg/kg	1	Metals-020	<1	1	39	33	17	94	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	110	[NT]
Nickel	mg/kg	1	Metals-020	<1	1	10	9	11	94	[NT]
Zinc	mg/kg	1	Metals-020	<1	1	38	45	17	95	[NT]

Result Definitions

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

Appendix VIII – Equipment Calibration Certificate

AES sensing safety

Calibration and Service Report – PID

Company:	ADE Consulting Group (NSW) F	**Manufacturer:**	RAE	**Serial #:**	595-002269
Contact:	Michelle Ridley	**Instrument:**	MINIRAE LITE SN: 595-002269	**Asset #:**	PID 4
Address:	Unit 6 7 Millennium Court Silverwater NSW 2128	**Model:**	MINIRAE LITE	**Part #:**	059-A126-000
		Configuration:	VOC 10.6EV	**Sold:**	04.05.2017
		Wireless:	-	**Last Cal:**	21.07.2022
Phone:	1300796922	**Network ID:**	-	**Job #:**	146263
Fax:		**Unit ID:**	-	**Cal Spec:**	
Email:	michelle.ridley@ade.group	**Details:**		**Order #:**	TBA - PID1/PID4

Calibration Certificate

Sensor	Type	Serial No.	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
Oxygen								
LEL								
PID	050-0000-004. 10.6EV 1/ 2 INCH LAMP	S023060018U3/1062R11 6509	Isobutylene	100ppm	WO279983-1		0	100.0
Battery	059-3053-000. MINIRAE LITE RECHARGEABLE	159U3W0383						
Toxic 1								
Toxic 2								
Toxic 3								
Toxic 4								
Toxic 5								
Toxic 6								

Calibrated/Repaired by: JERRY JI Date: 23.01.2023 Next Due: 23.07.2023

Calibration and Service Report – PID

Company:	ADE Consulting Group (NSW) F	**Manufacturer:**	RAE	**Serial #:**	595-002269
Contact:	Michelle Ridley	**Instrument:**	MINIRAE LITE SN: 595-002269	**Asset #:**	PID 4
Address:	Unit 6 7 Millennium Court Silverwater NSW 2128	**Model:**	MINIRAE LITE	**Part #:**	059-A126-000
		Configuration:	VOC 10.6EV	**Sold:**	04.05.2017
		Wireless:	-	**Last Cal:**	21.07.2022
Phone:	1300796922	**Network ID:**	-	**Job #:**	146263
Fax:		**Unit ID:**	-	**Cal Spec:**	
Email:	michelle.ridley@ade.group	**Details:**		**Order #:**	TBA - PID1/PID4

Item	Test	Pass/Fail	Comments	Serial Number
Battery	NiCd, NiMH, Dry cell, LiIon	P		
Charger	Power Supply	P		
	Cradle, Travel Charger	P		
Pump	Flow	x	Cleaned pump, >450ml/min	
Filter	Filter, fitting, etc	x	Replaced	
Alarms	Audible, visual, vibration	P		
Display	Operation	P		
Switches	Operation	P		
PCB	Operation	P		
Connectors	Condition	P		
Firmware	Version	P	V2.22A	
Datalogger	Operation	P		
Monitor Housing	Condition	P		
Case	Condition / Type	-		
Sensors				
PID	Lamp	P	Cleaned	
PID	Sensor	P	Cleaned (ultrasonic bath)	
THP	Sensor	P	Cleaned	

Engineer's Report

Cleaned lamp, lamp housing and sensor detector (ultrasonic bath. Unit was unscrewed from sensor cover, sensor detector exposed and very dirty)
Cleaned THP sensor, checked moisture sensitivity
Cleaned pump assembly, checked flowrate and stall values
Checked unit settings and PC configuration
Unit serviced and calibrated.

Appendix IX – Before You Dig Australia

Job No 33723003

Phone: 1100
www.byda.com.au

Caller Details

Contact:	Andrew Hunt	**Caller Id:**	3138116	**Phone:**	0405 685 962
Company:	14 617 358 808				
Address:	Unit 6 7 Millennium Court Silverwater NSW 2128	**Email:**	andrew.hunt@ade.group		

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.

User Reference: Mamre and Abbotts Road Rozelle

Working on Behalf of: Private

Enquiry Date:	**Start Date:**	**End Date:**
01/03/2023	06/03/2023	27/03/2023

Address:

1016-1028 Mamre Road
Kemps Creek NSW 2178

Job Purpose:	**Onsite Activities:**
Excavation	Mechanical Excavation
Location of Workplace:	**Location in Road:**
Road Reserve	Road, Nature Strip

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:

Not supplied

Your Responsibilities and Duty of Care

- The lodgement of an enquiry does not authorise the project to commence. You must obtain all necessary information from any and all likely impacted asset owners prior to excavation.
- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at **www.byda.com.au**
- **For more information on safe excavation practices, visit www.byda.com.au**

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days.
Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.
** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.
# Asset owners highlighted with a hash # require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
221801111	Endeavour Energy	(02) 9853 4161	NOTIFIED
221801109	NBN Co NswAct	1800 687 626	NOTIFIED
221801108	Penrith City Council	(02) 4732 8010	NOTIFIED
221801110	Sydney Water	13 20 92	NOTIFIED
221801112	Telstra NSW Central	1800 653 935	NOTIFIED

END OF UTILITIES LIST

To:	Andrew Hunt
Phone:	Not Supplied
Fax:	Not Supplied
Email:	andrew.hunt@ade.group

Dial before you dig Job #:	33723003
Sequence #	221801109
Issue Date:	01/03/2023
Location:	1016-1028 Mamre Road , Kemps Creek , NSW , 2178

Indicative Plans

2	10	18
3	11	19
4	12	20
5	13	21
6	14	22
7	15	23
8	16	24

LEGEND

34	Parcel and the location
5	Pit with size "5"
2E	Power Pit with size "2E". Valid PIT Size: e.g. 2E, 5E, 6E, 8E, 9E, E, null.
	Manhole
	Pillar
2 PO – T- 25.0m P40 – 20.0m 5 9	Cable count of trench is 2. One "Other size" PVC conduit (PO) owned by Telstra (-T-), between pits of sizes, "5" and "9" are 25.0m apart. One 40mm PVC conduit (P40) owned by NBN, between pits of sizes, "5" and "9" are 20.0m apart.
2 10.0m 5 9	2 Direct buried cables between pits of sizes ,"5" and "9" are 10.0m apart.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Copper/RF/Fibre) cables.
5 9	Trench containing only DESIGNED/PLANNED (Copper/RF/Fibre/Power) cables.
5 9	Trench containing any INSERVICE/CONSTRUCTED (Power) cables.
BROADWAY ST	Road and the street name "Broadway ST"
Scale	0 20 40 60 Meters 1:2000 1 cm equals 20 m

To:	Andrew Hunt
Phone:	Not Supplied
Fax:	Not Supplied
Email:	andrew.hunt@ade.group

Dial before you dig Job #:	33723003
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Information

The area of interest requested by you contains one or more assets.

nbn™ Assets	Search Results
Communications	Asset identified
Electricity	No assets

In this notice **nbn™ Facilities** means *underground fibre optic, telecommunications and/or power facilities, including but not limited to cables, owned and controlled by **nbn™***

Location of **nbn™** Underground Assets

We thank you for your enquiry. In relation to your enquiry at the above address:

- **nbn's** records indicate that there **ARE** **nbn™** Facilities in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact, scale or accurate depiction of the location, depth and alignment of **nbn™** Facilities shown on the Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- You should note that, at the present time, the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables. As such, consistent with the notes below, particular care must be taken by you to make your own enquiries and investigations to precisely locate any power cables and manage the risk arising from such cables accordingly.
- The information contained in the Indicative Plan/s is valid for 28 days from the date of issue set out above.You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™**

Facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. For any enquiries related to moving assets or Planning and Design activities, please visit the **nbn** Commercial Works website to complete the online application form. If you are planning to excavate and require further information, please email dbyd@nbnco.com.au or call 1800 626 329.

Notes:

1. You are now aware that there are **nbn™** Facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (CoA) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By accepting the plans,you are agreeing to these conditions. These conditions are in addition, and not in replacement of, any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators, e.g DBYD Certified Locators, at your cost to locate **nbn™** Facilities during any activities you carry out on site).
2. You acknowledge that **nbn** has specifically notified you above that the Indicative Plans are likely to be more accurate in showing location of fibre optics and telecommunications cables than power cables. There may be a variation between the line depicted on the Indicative Plans and the location of any power cables.
3. You should not assume that **nbn™** Facilities follow straight lines or are installed at uniformed depths along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.
4. In carrying out any works in the vicinity of **nbn™** Facilities, you must maintain the following minimum clearances:
    - 300mm when laying assets inline, horizontally or vertically.
    - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates.
    - 1000mm when operating mechanical excavators.
    - Adherence to clearances as directed by other asset owner's instructions and take into account any uncertainty for power cables.
5. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn™** fibre optic,copper and coaxial cables,and power cable feed to **nbn™** assets).Damage to underground electric cables may result in:
    - Injury from electric shock or severe burns, with the possibility of death.
    - Interruption of the electricity supply to wide areas of the city.
    - Damage to your excavating plant.
    - Responsibility for the cost of repairs.
6. You must take all reasonable precautions to avoid damaging **nbn™** Facilities. These precautions may include but not limited to the following:
    - All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example: the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
    - If any undisclosed underground cables are located, notify **nbn** immediately.

- All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
- The safety of the public and other workers must be ensured.
- All excavations must be undertaken in accordance with all relevant legislation and regulations.

7. You will be responsible for all damage to **nbn™** Facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include, without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
8. You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.
9. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any plans(including Indicative Plans) attached hereto. Except as expressly provided to the contrary in this information sheet or the attached plans(including Indicative Plans), all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

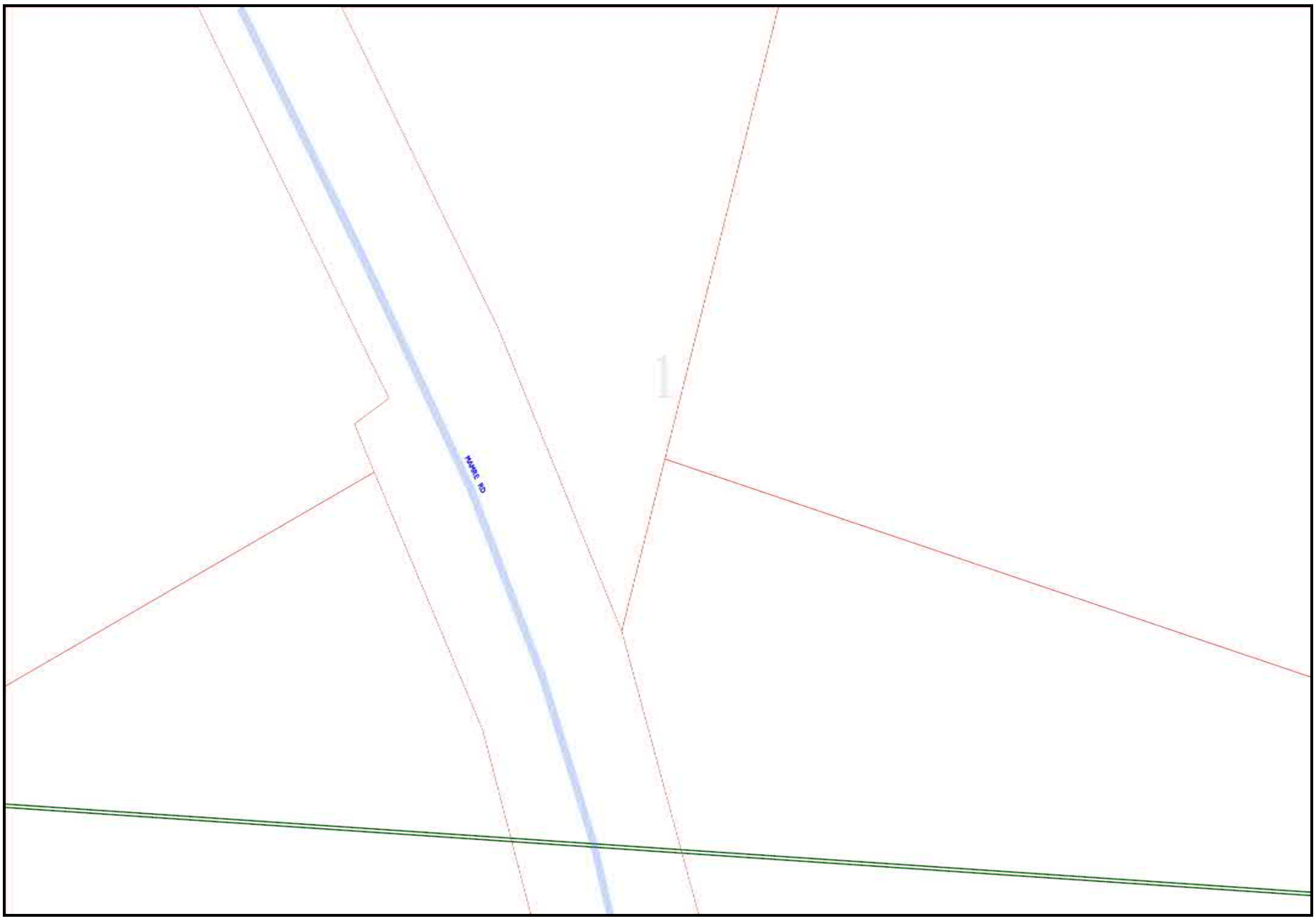
All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)
	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995
	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

nbn DBYD

Date: 01/03/2023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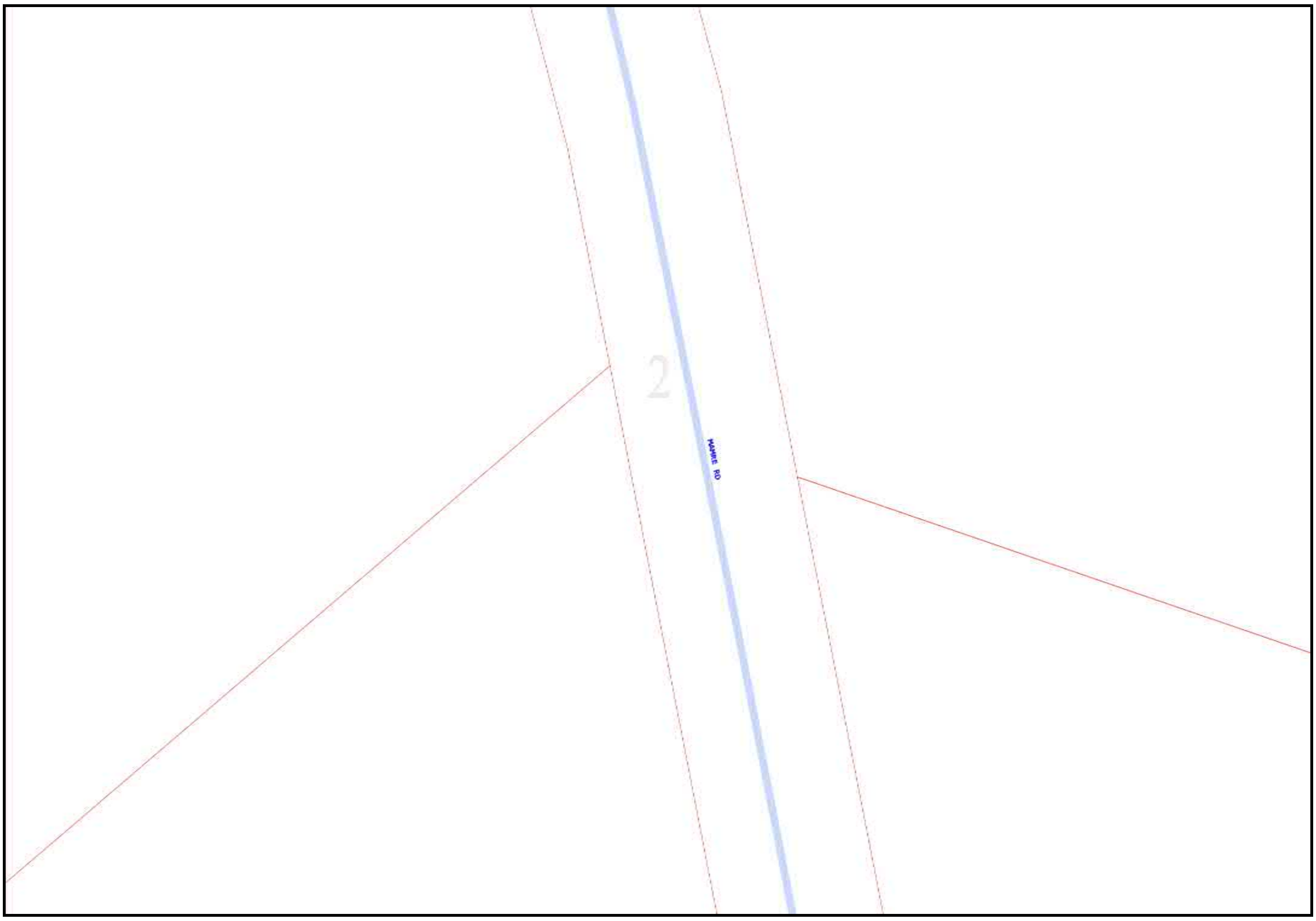
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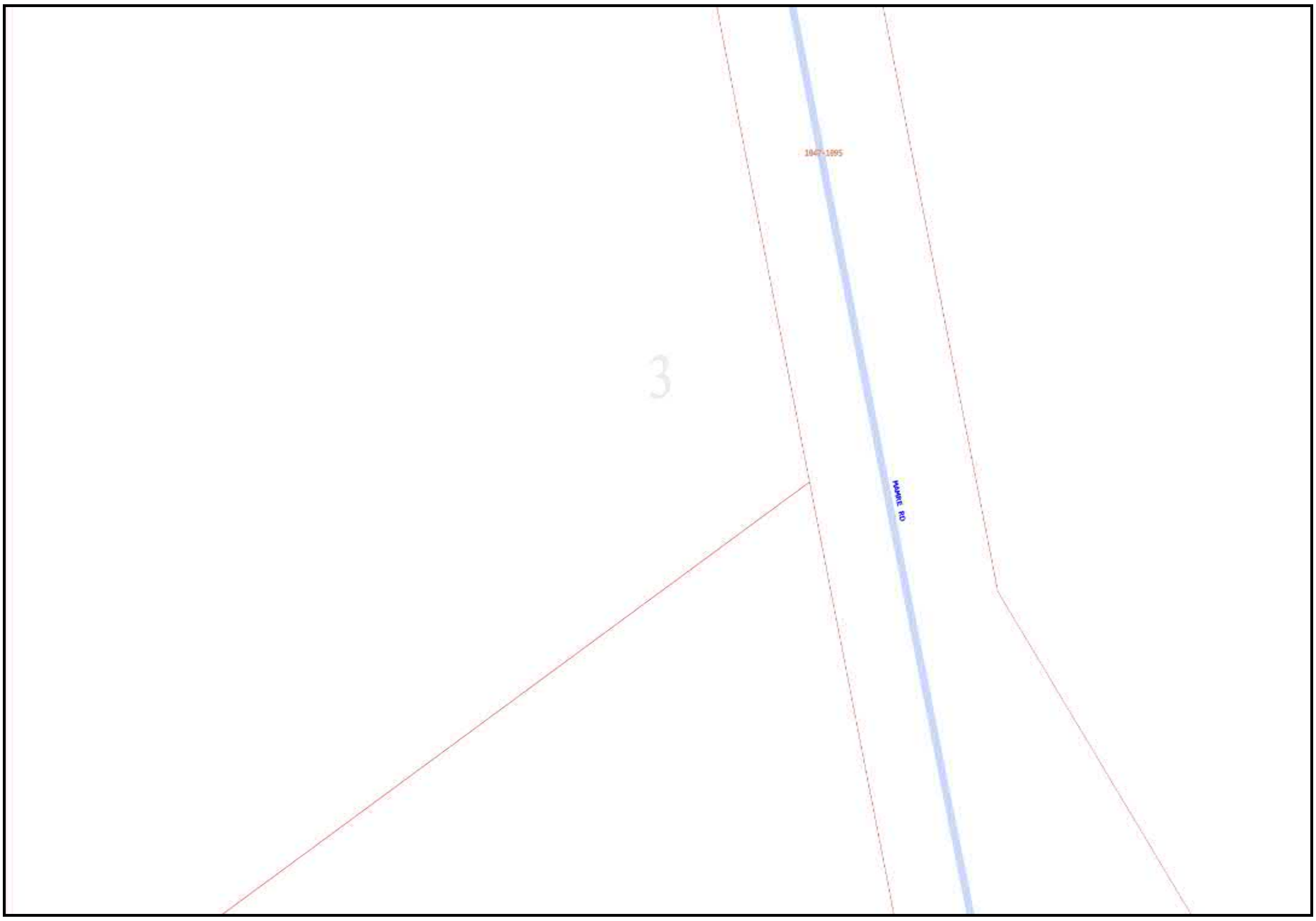
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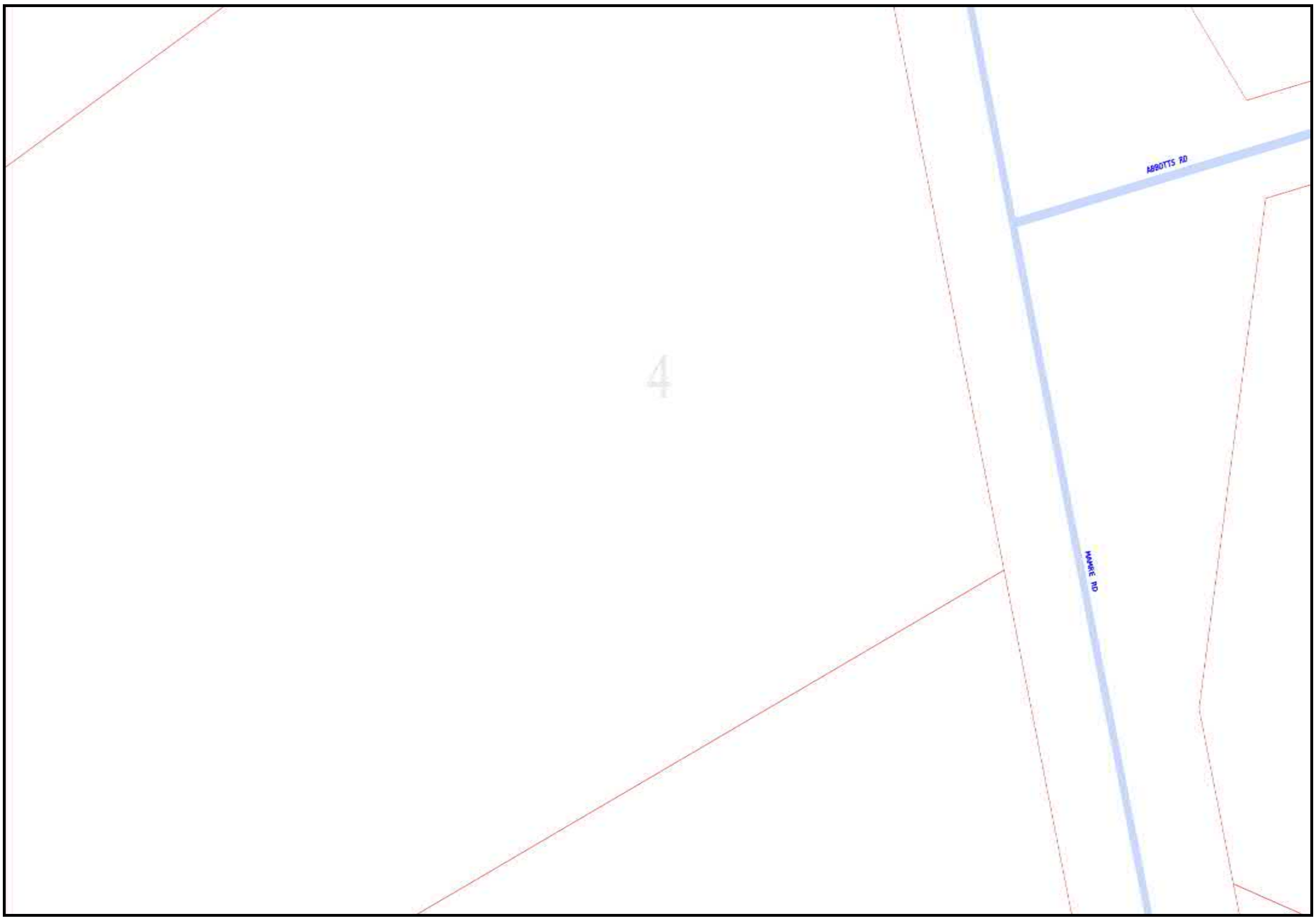
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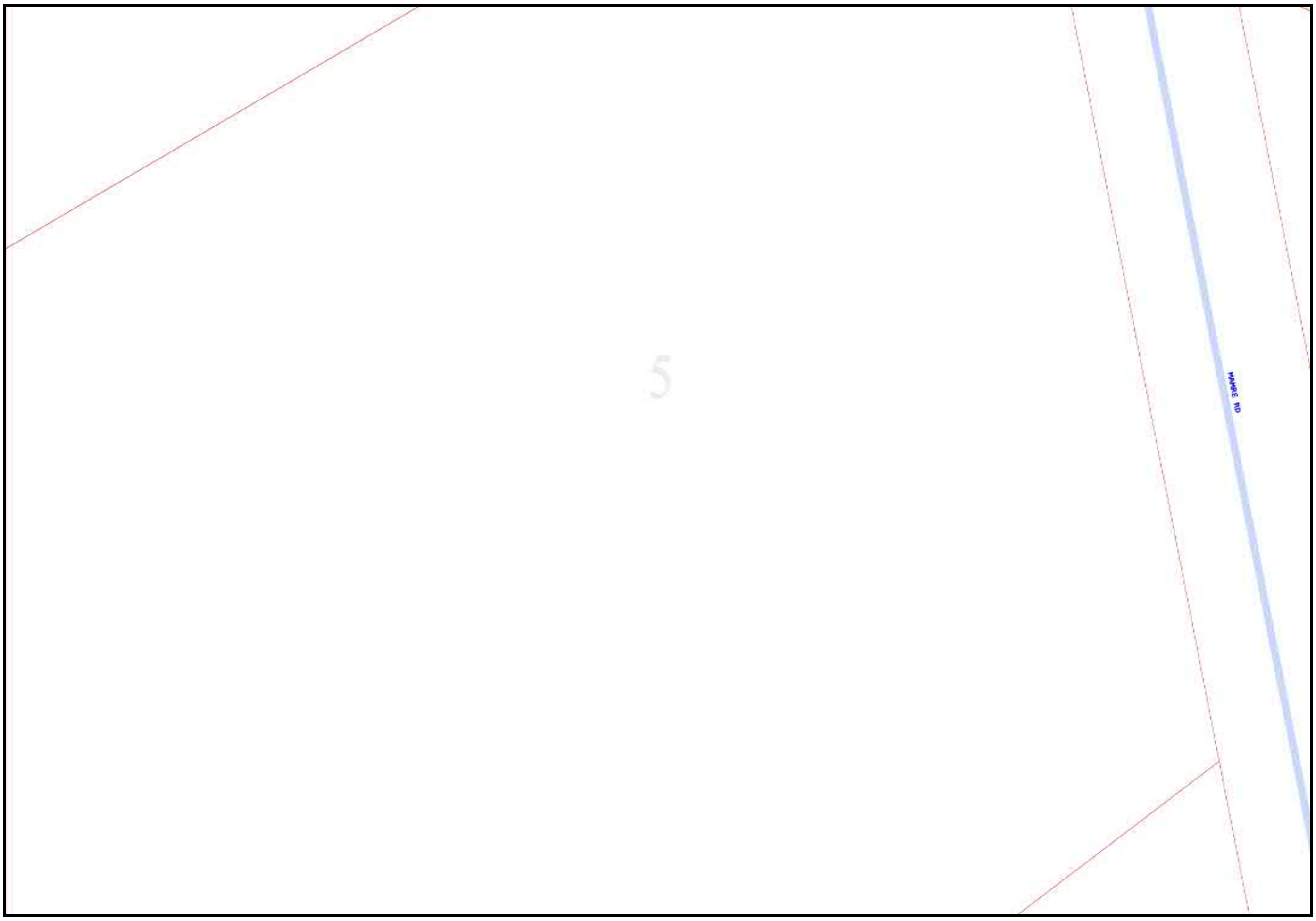
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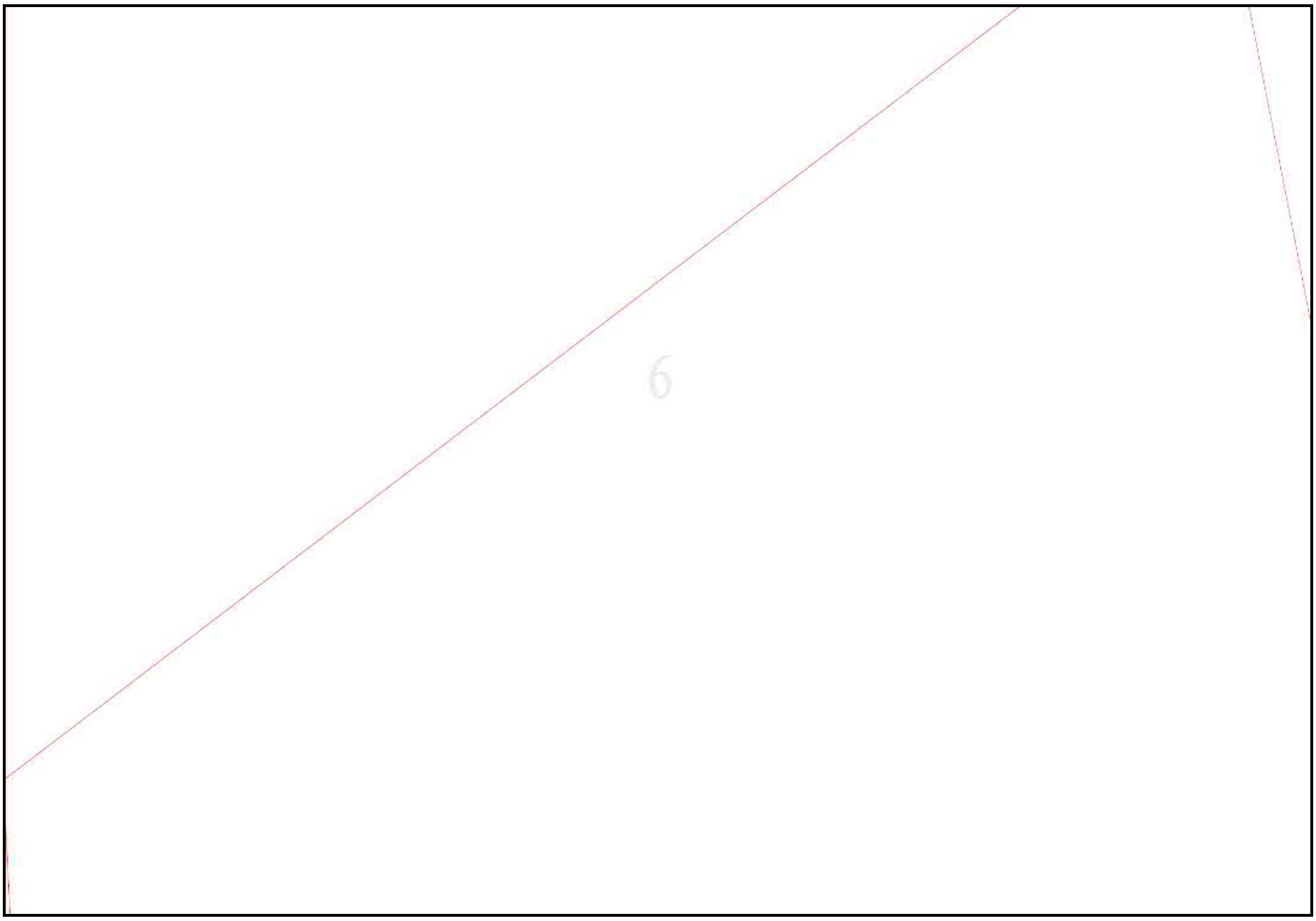
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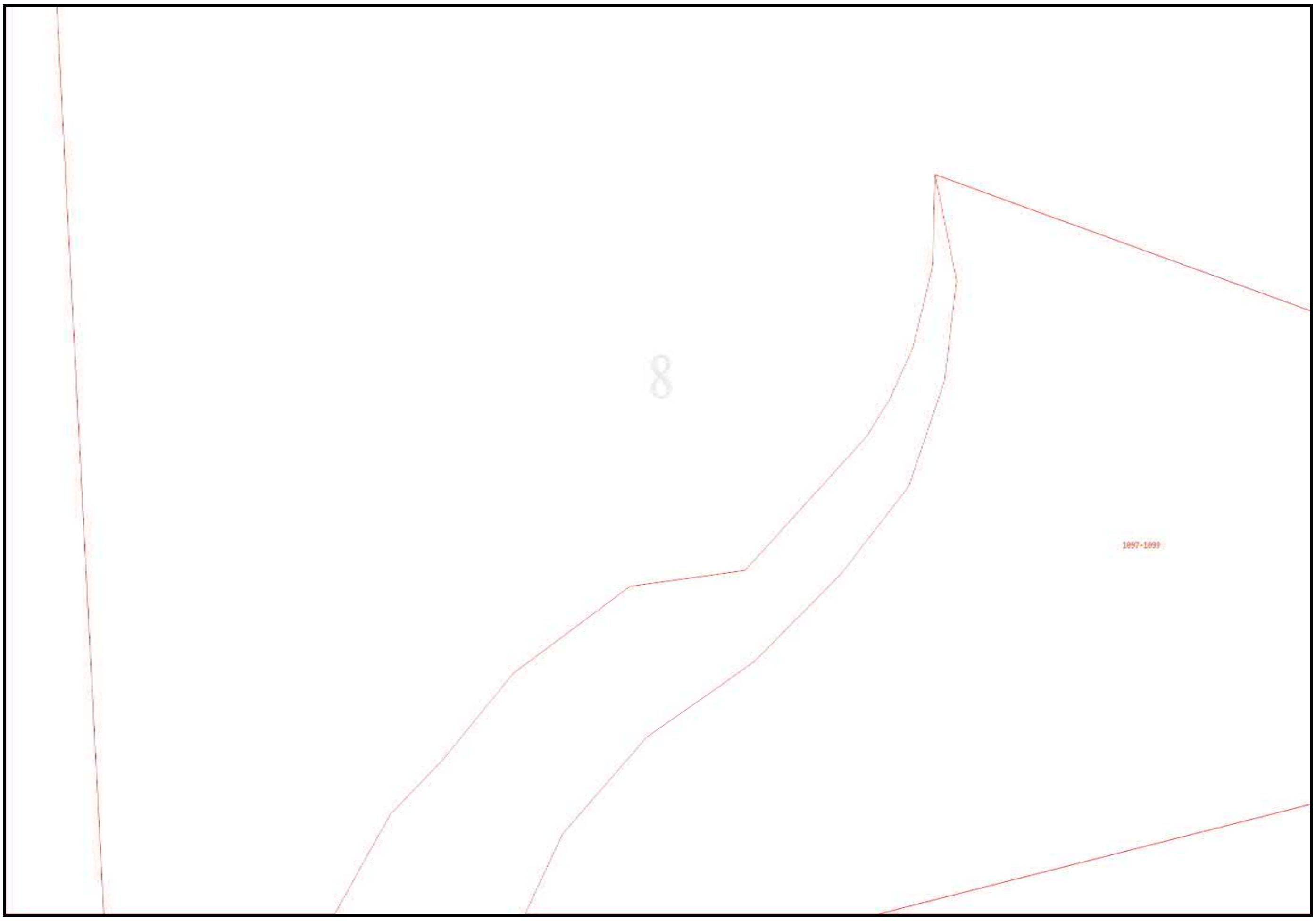
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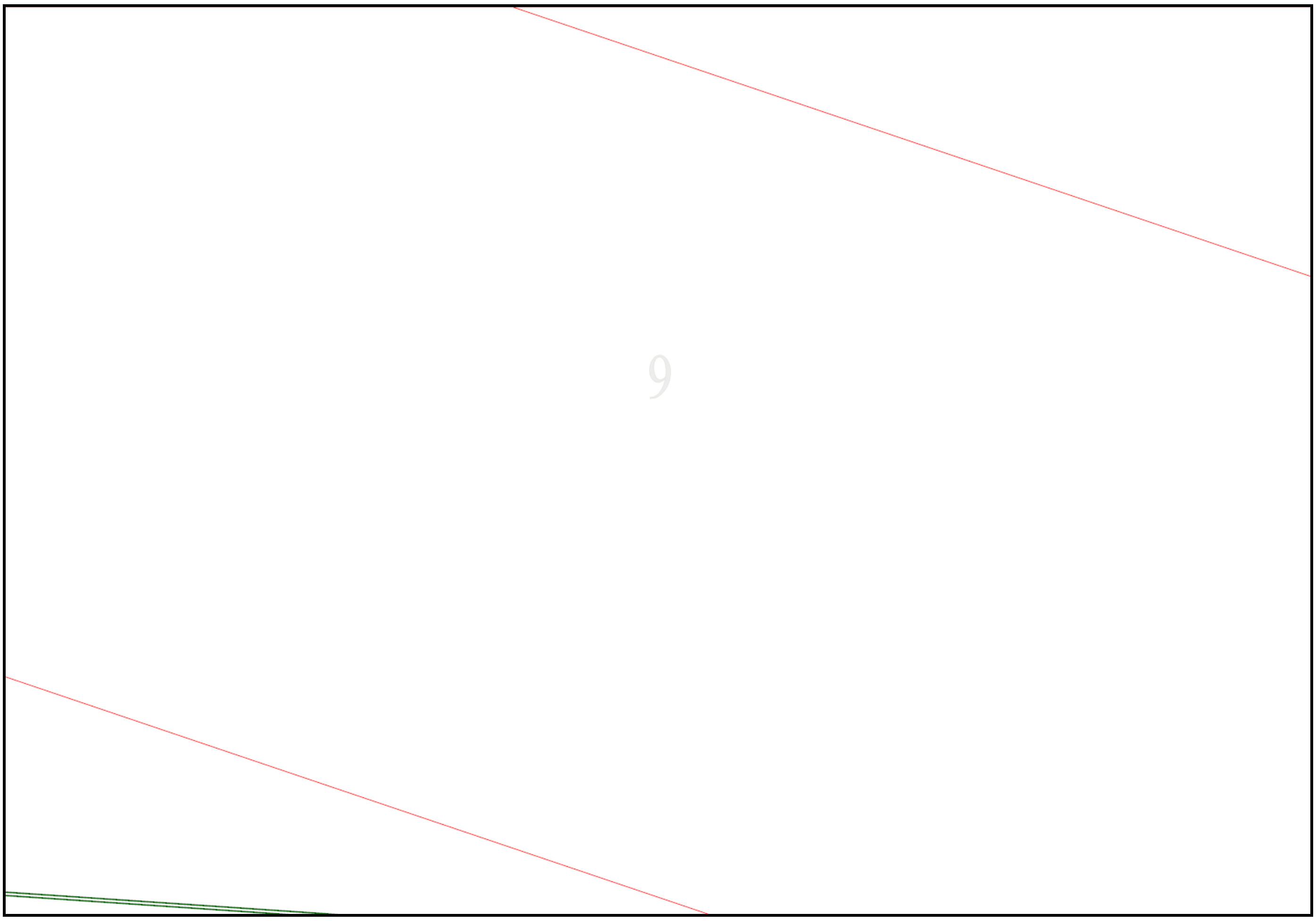
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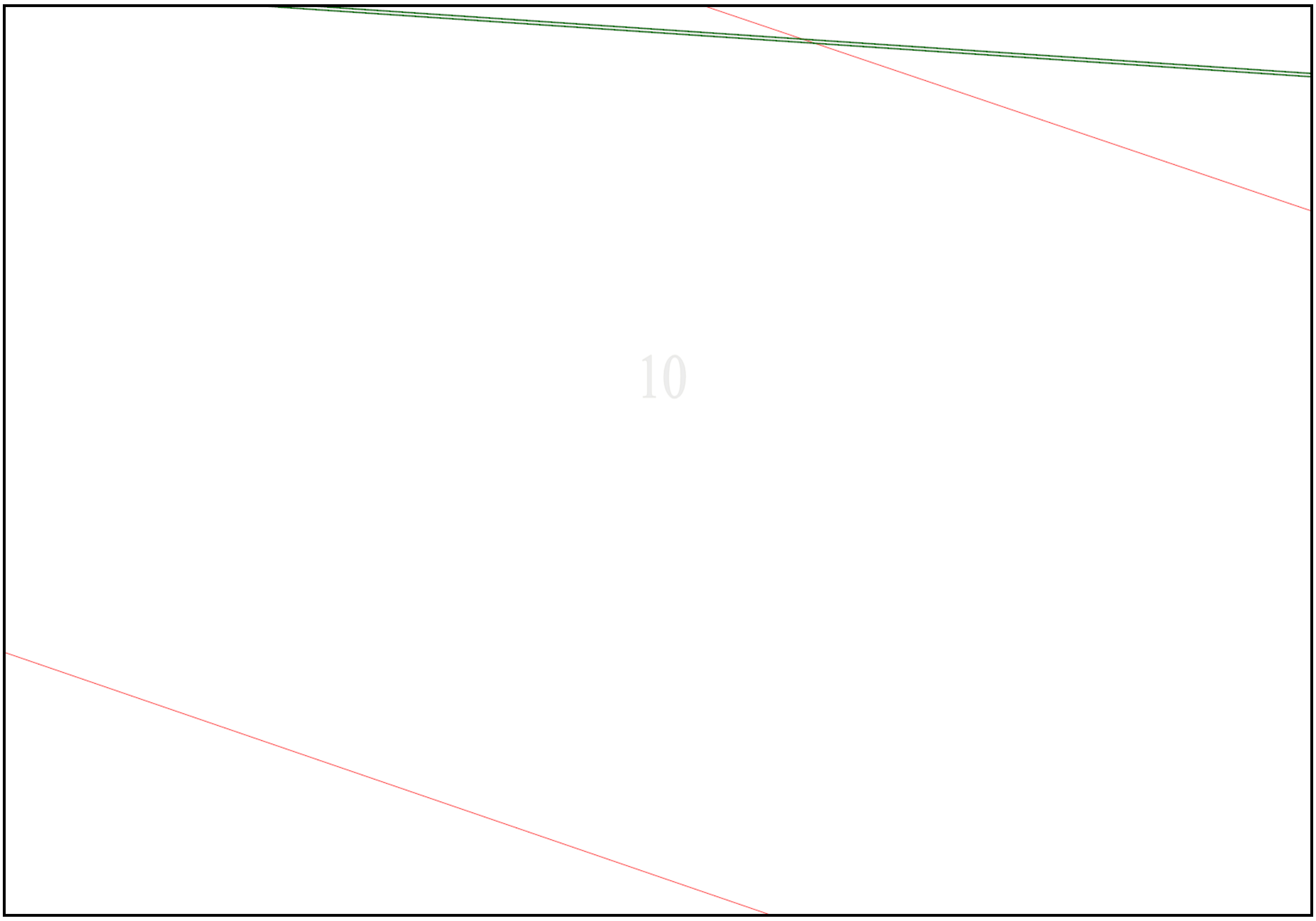
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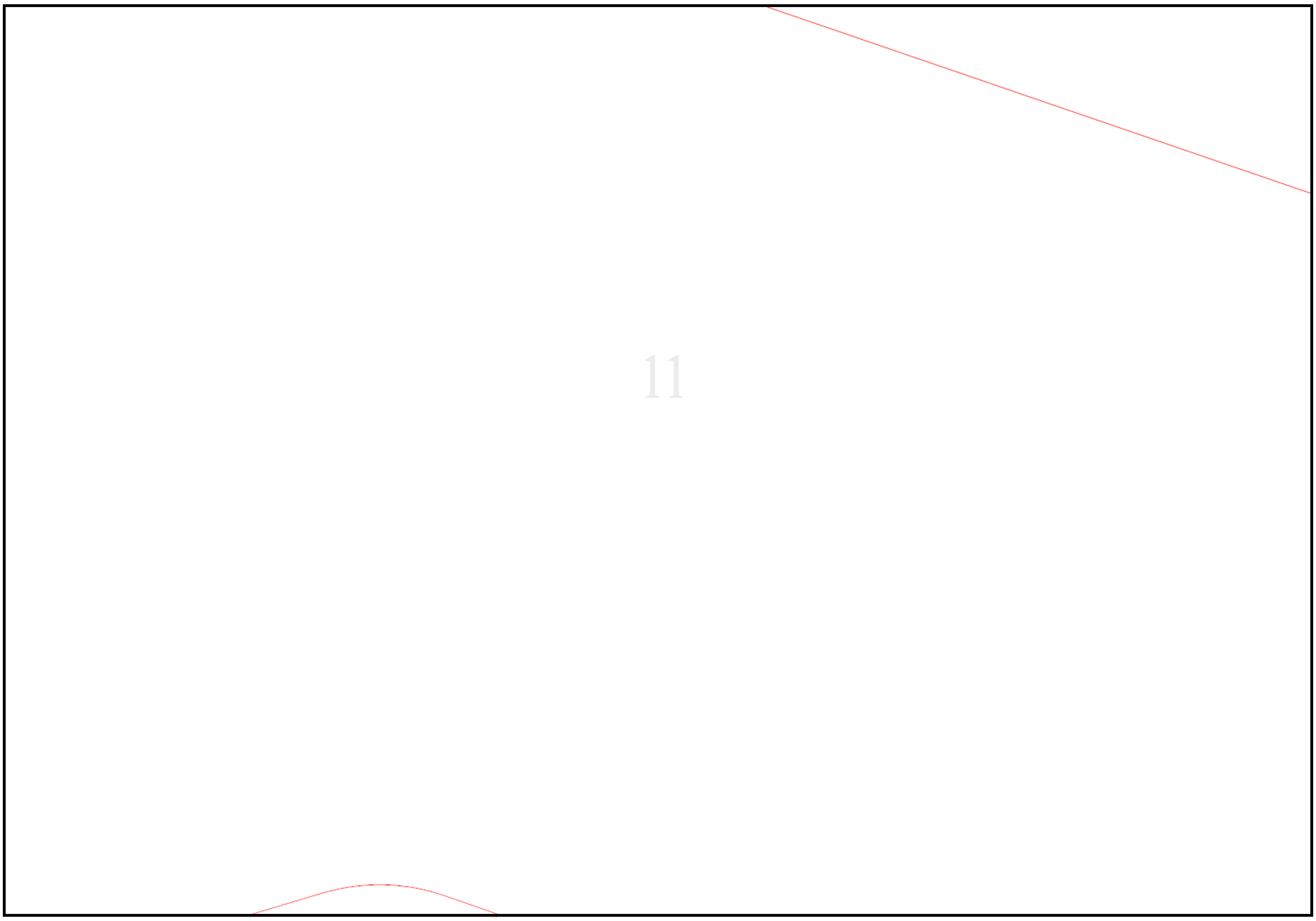
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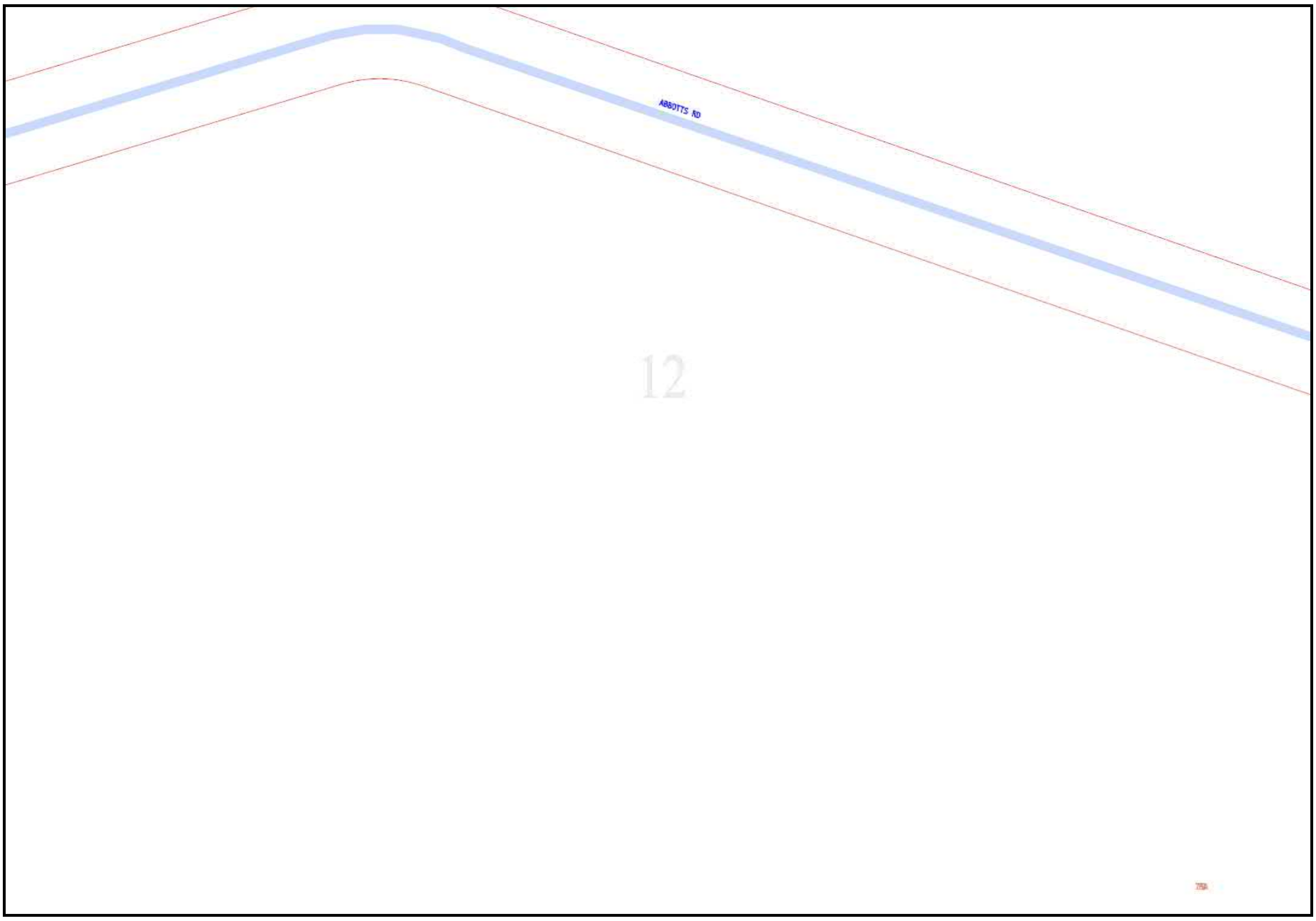
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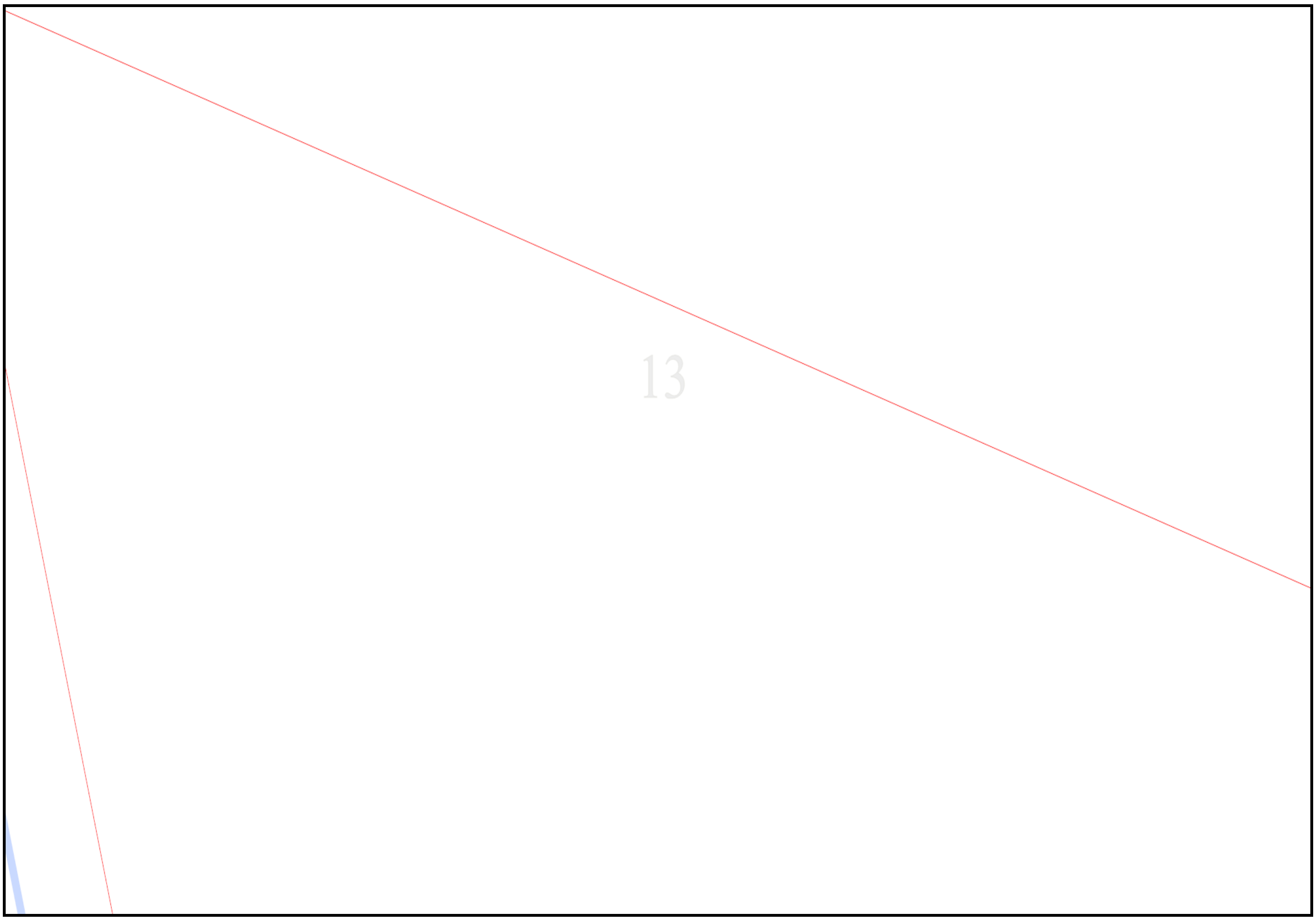
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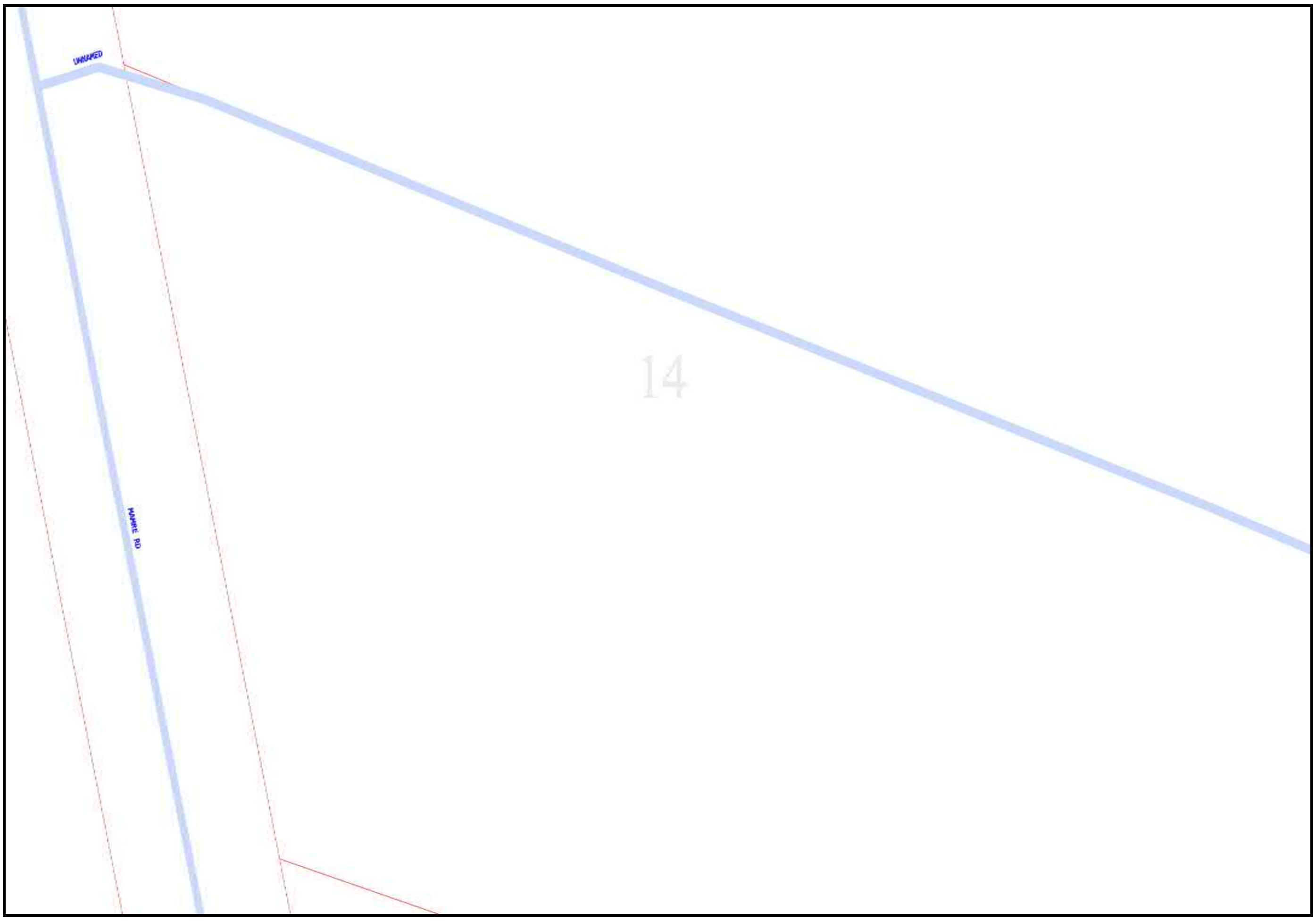
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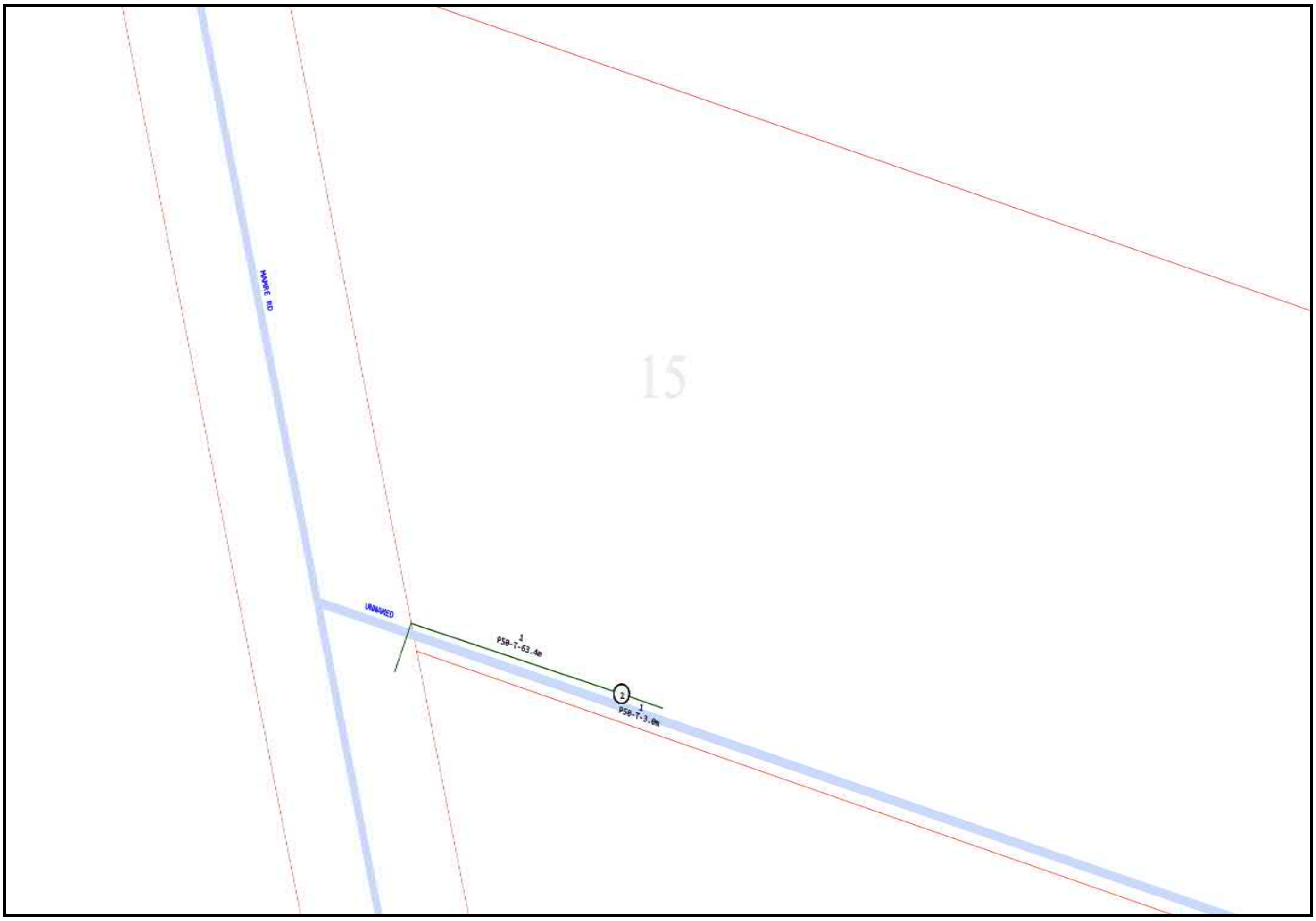
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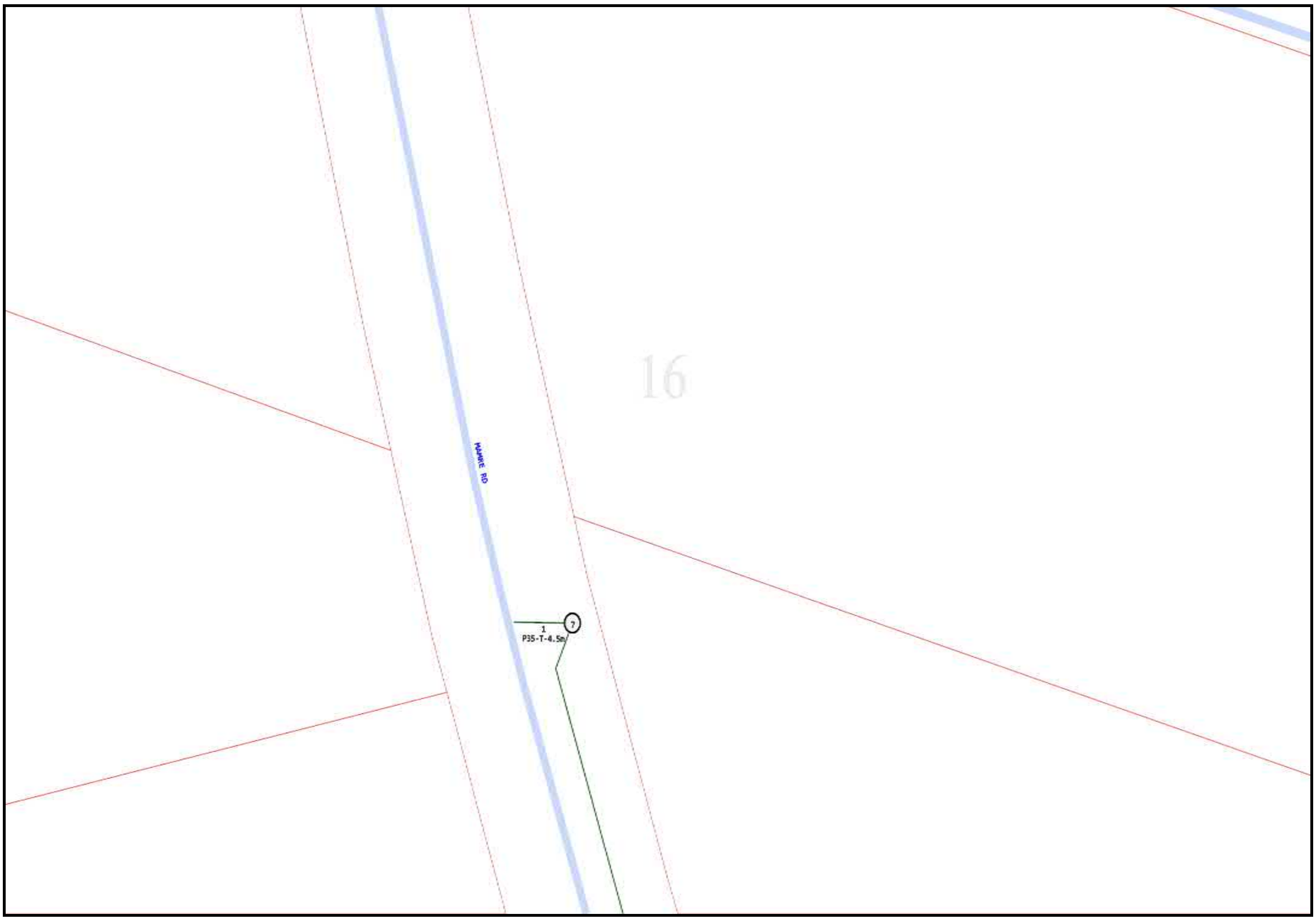
1
P50-T-3.0m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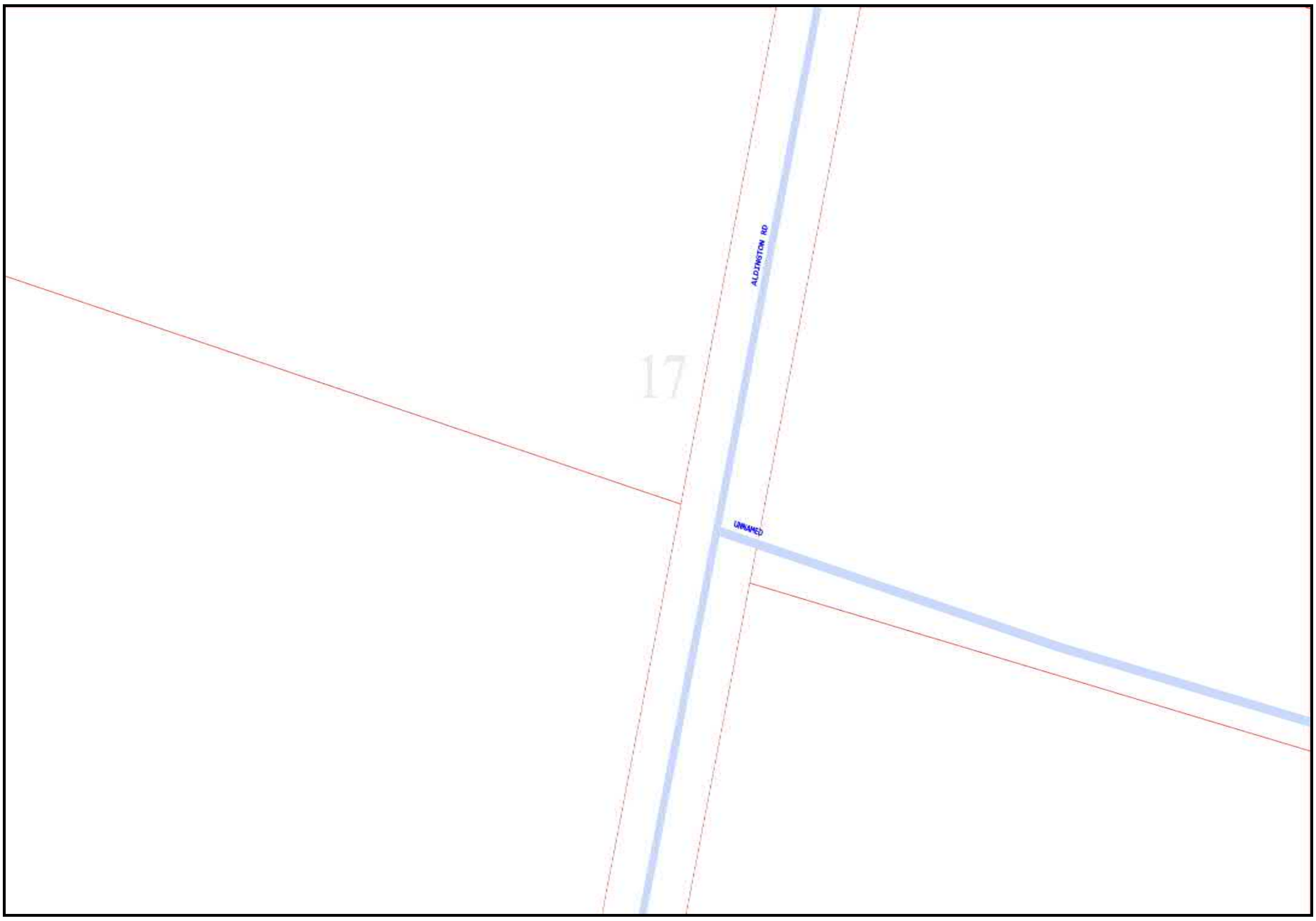
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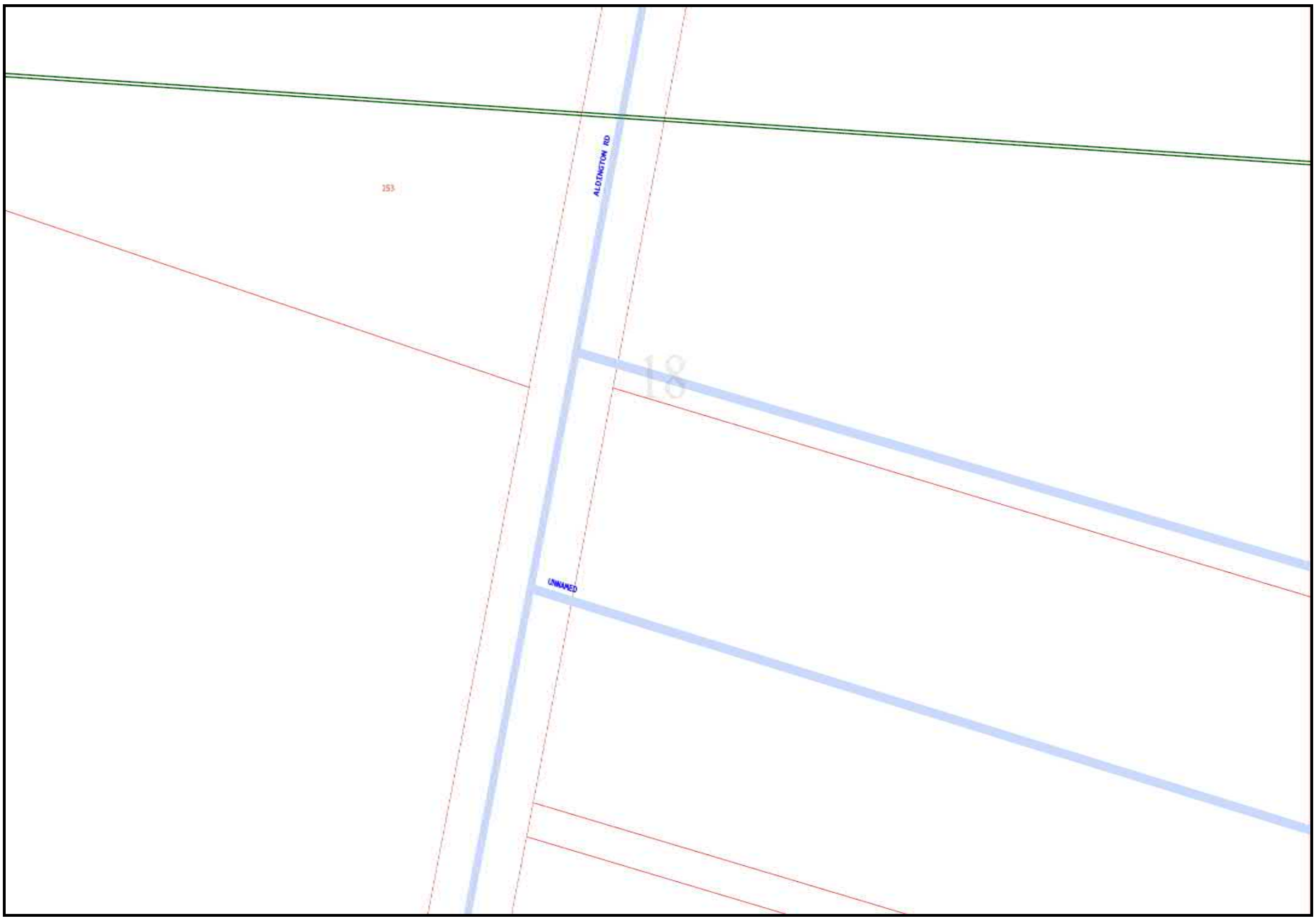
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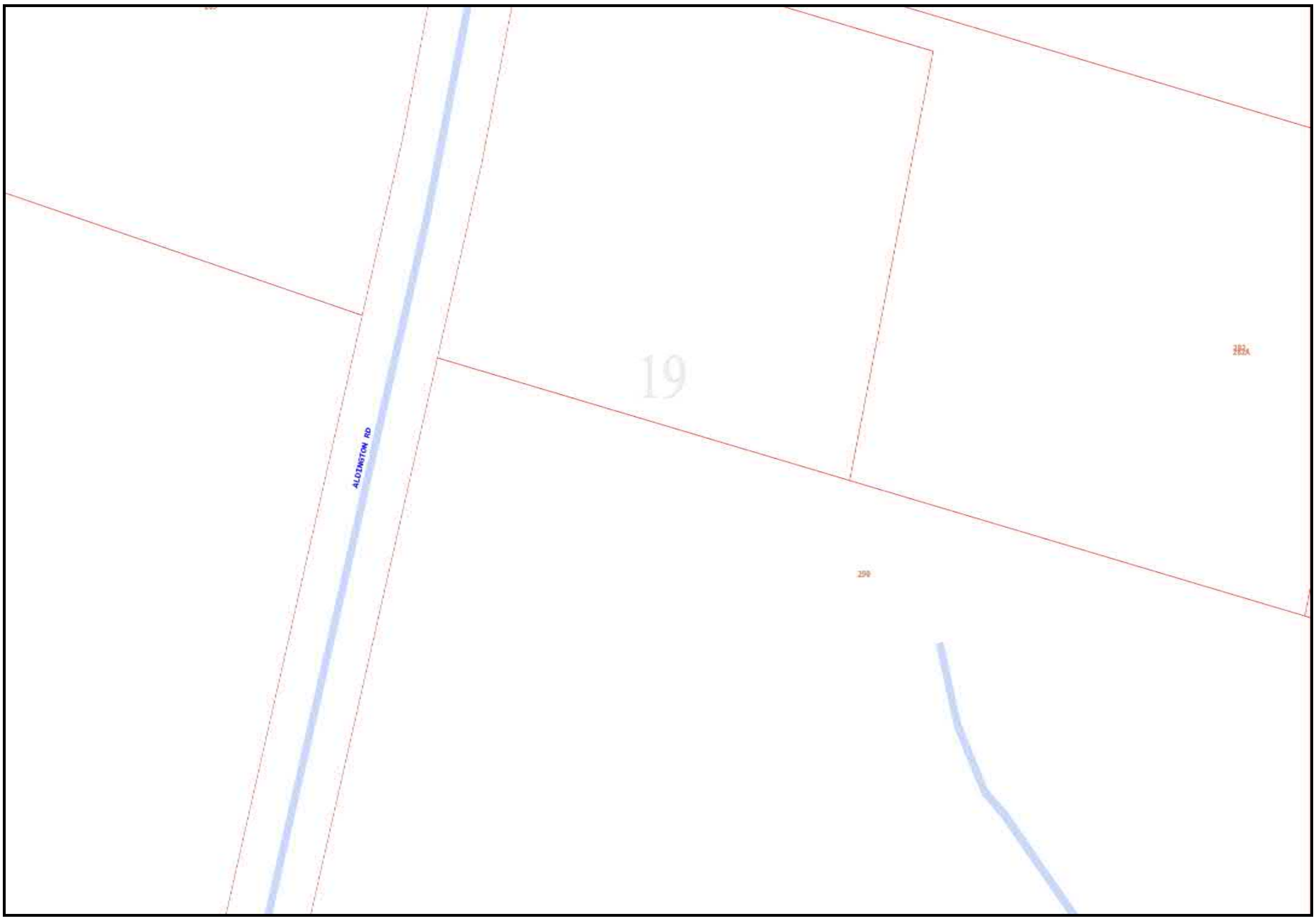
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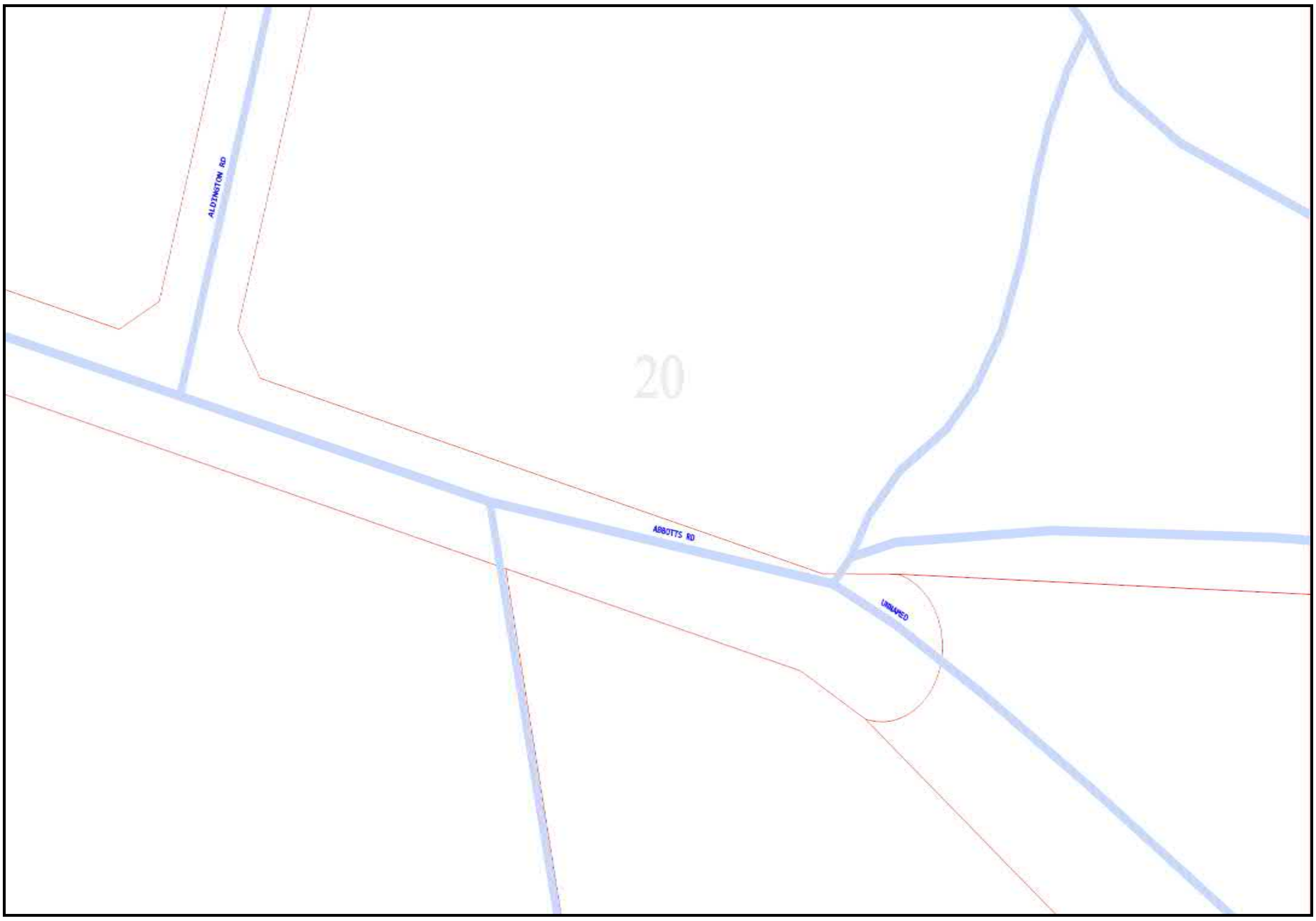
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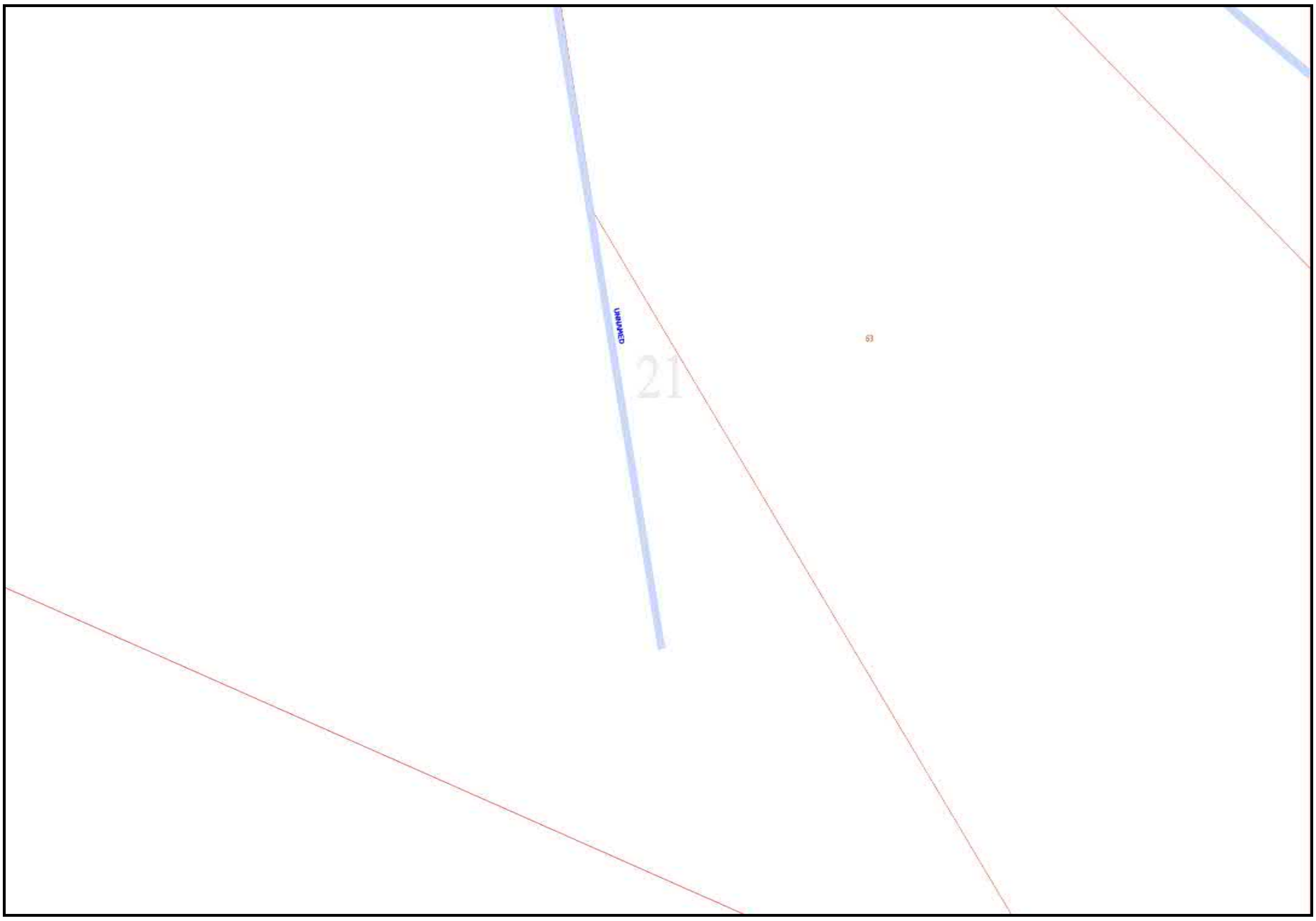
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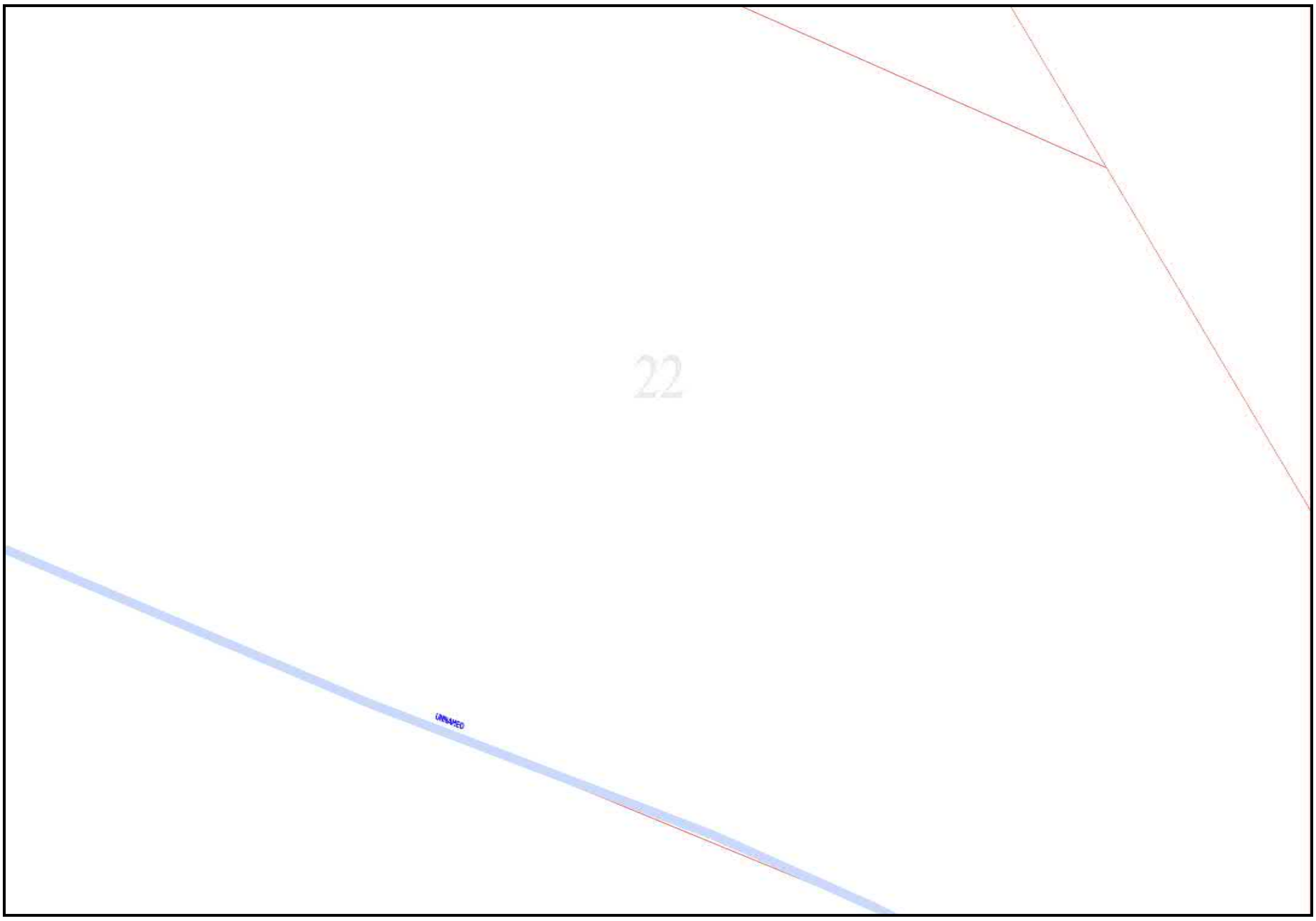
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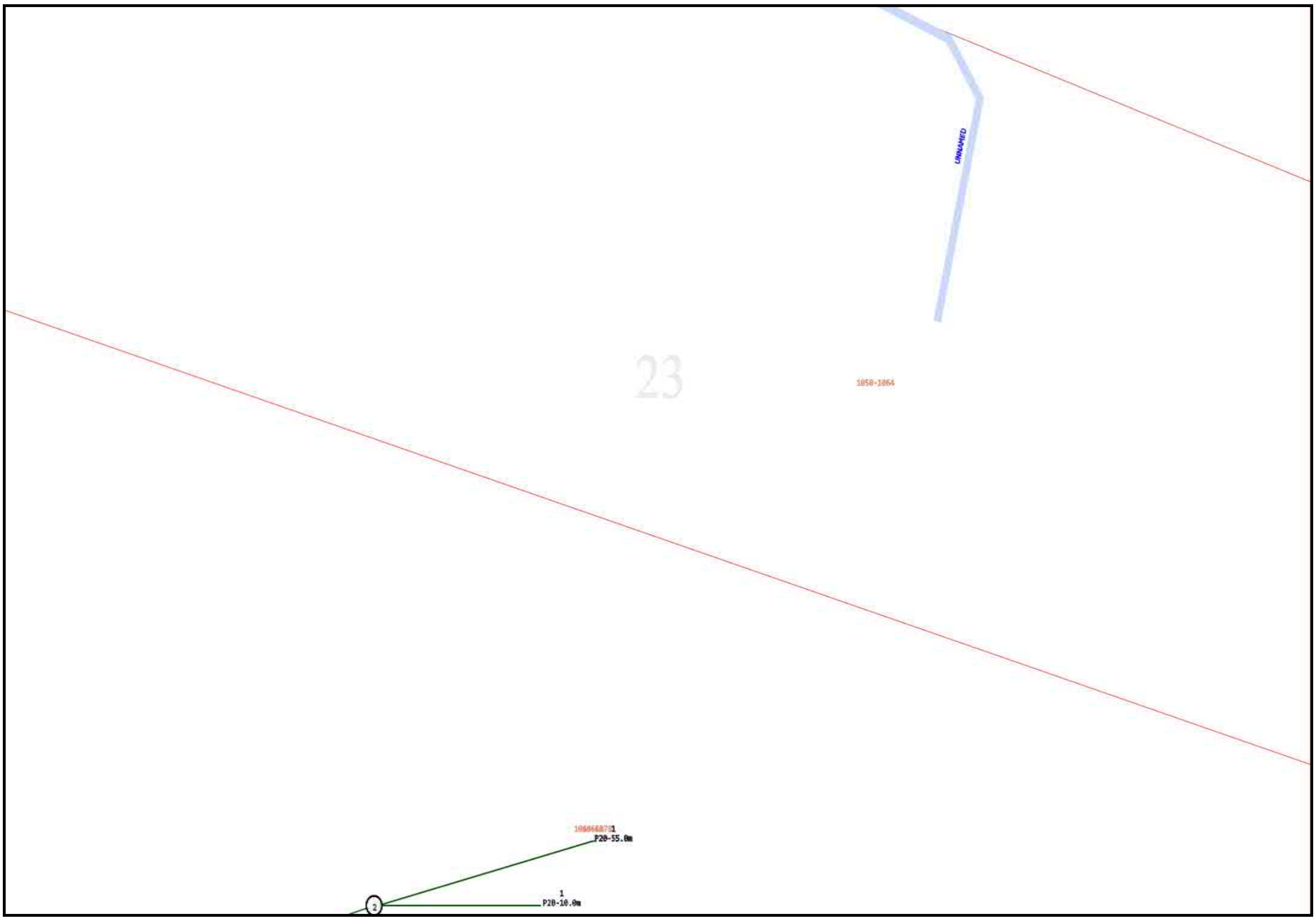
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1058-1064
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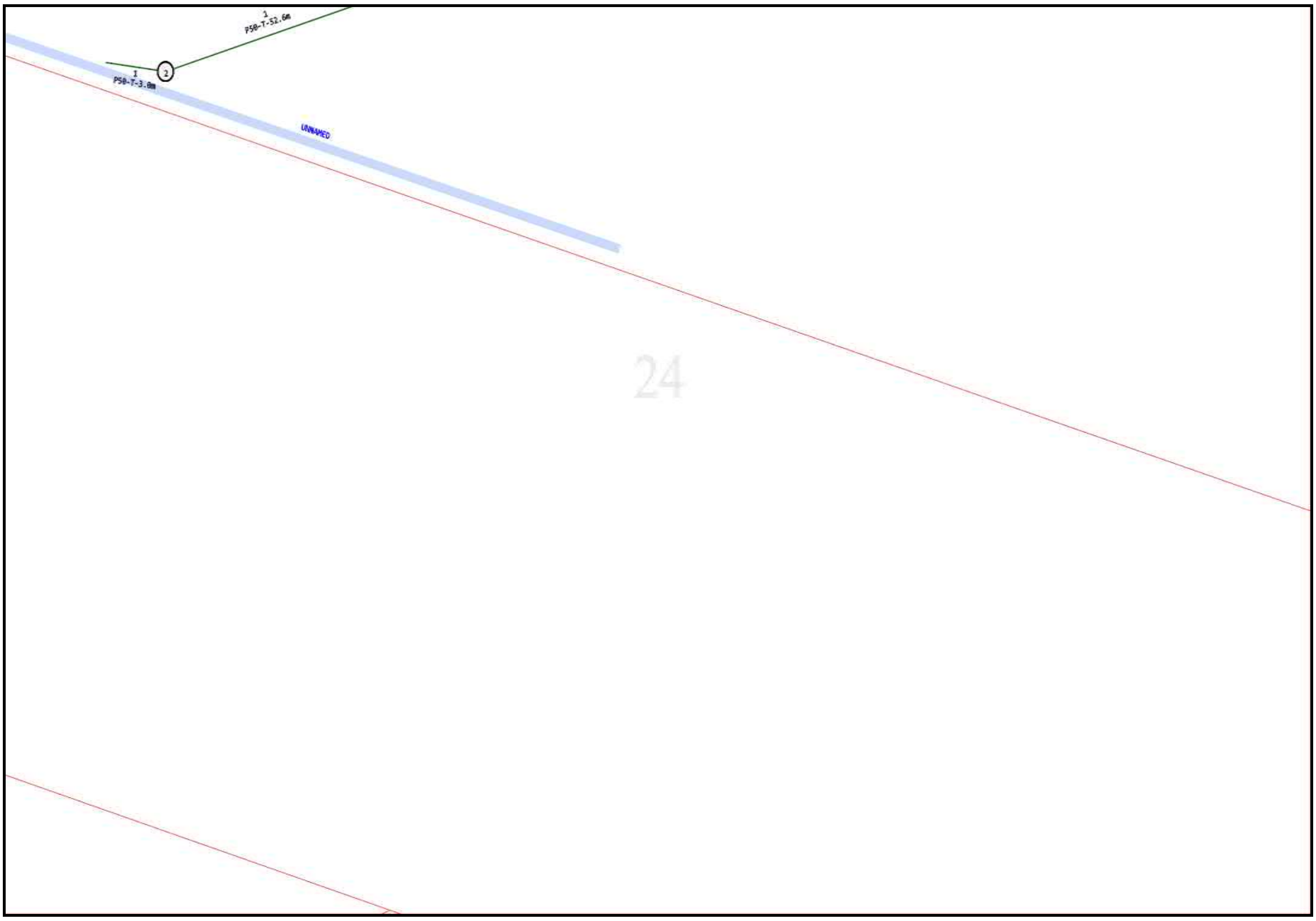
P20-55.0m
1
P20-10.0m



Emergency Contacts

You must immediately report any damage to the **nbn™** network that you are/become aware of. Notification may be by telephone - 1800 626 329.

If further clarification is required, please contact:
Endeavour Energy
Phone: (02) 9853 4161 (8:00am-4:30pm Mon-Fri)
Emergency Phone Number: 131 003

BYDA Underground Search Report

Date: 01/03/2023

BYDA Sequence No: 221801111 **BYDA Job No:** 33723003

ENDEAVOUR ENERGY ASSETS AFFECTED

To:	Andrew Hunt	Company:	14 617 358 808
Address:	Unit 6,7 Millennium Court, Silverwater, NSW 2128		
Cust. ID:	3138116	Email:	andrew.hunt@ade.group
Phone:	+61405685962		
Enquiry Location:	1016-1028 Mamre Road, Kemps Creek, NSW 2178		

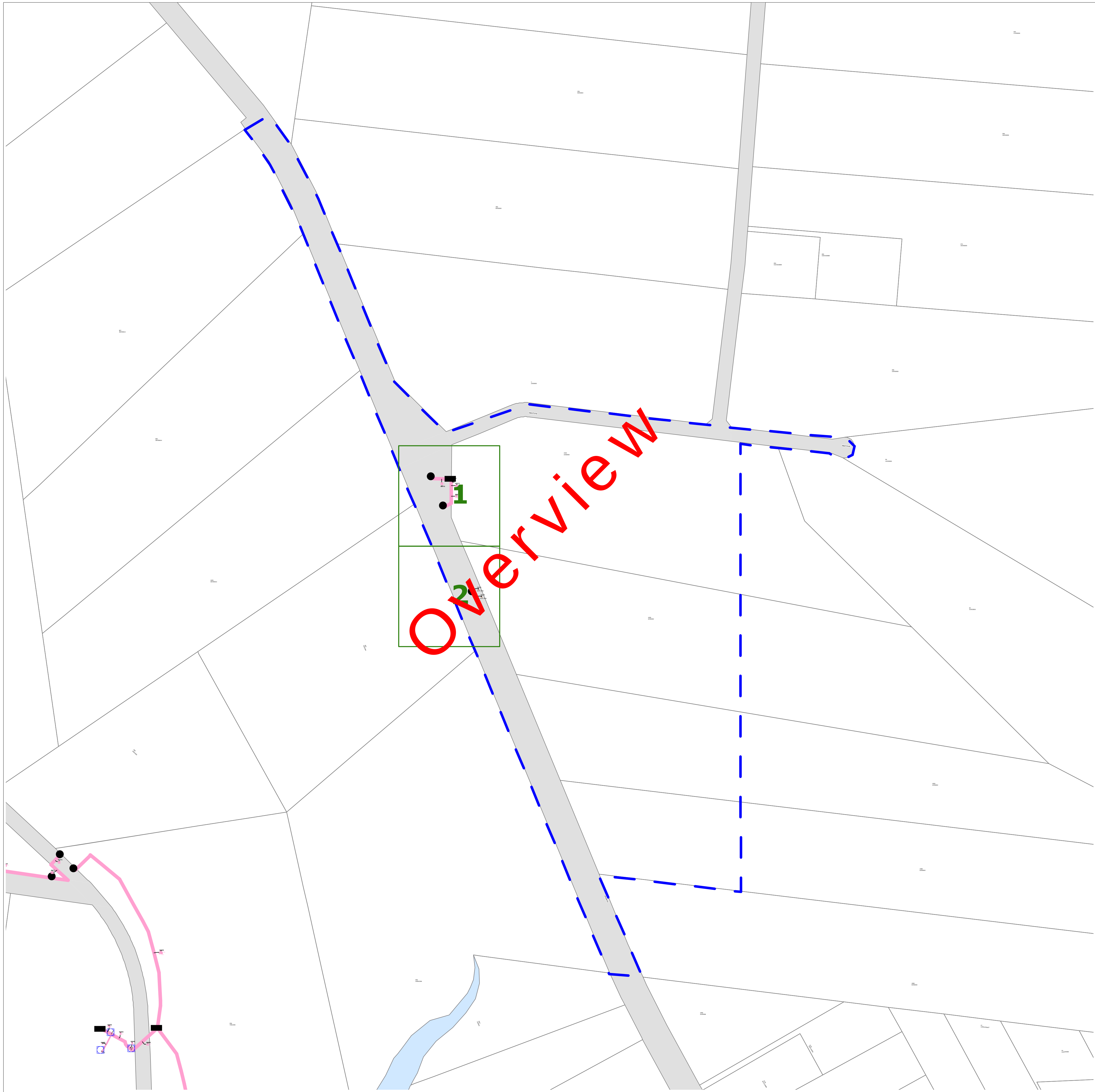
Our Search has shown that **UNDERGROUND ASSETS ARE PRESENT** on our plans within the nominated enquiry location. This search is based on the graphical position of the excavation site as denoted in the BYDA customer confirmation sheet.

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- Underground assets may be congested at the approach to bridges and other structures. Typical asset depths and alignment may vary substantially, rising and falling sharply and at much shallower depths than elsewhere as they are channelled into shared allocated spaces on bridges and other structures. Additional precautions and underground asset location methods will be required in proximity to bridges and other structures.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice

SUPPLEMENTARY MATERIAL

Material	Purpose	Location
BYDA Cover Letter	Endeavour Energy BYDA response Cover Letter	Attached
BYDA Important Information & Disclaimer	Endeavour Energy disclaimer, responsibilities and information on understanding plans	Attached
BYDA Response Plans	Endeavour Energy BYDA plans	Attached
Work Cover NSW *"Work near underground assets: Guide"*	Guideline for anyone involved in construction work near underground assets	Contact Work Cover NSW for a copy
Work Cover NSW *"Excavation work: Code of practice"*	Practical guidance on managing health and safety risks associated with excavation	URL [Click Here]
Safe Work Australia *"Working in the vicinity of overhead and underground electric lines guidance material"*	Provides information on how to manage risks when working in the vicinity of overhead and underground electric lines at a workplace	URL [Click Here]
Endeavour Energy Safety Brochures & Guides	To raise awareness of dangers of working on or near Endeavour Energy's assets	URL [Click Here]



Endeavour Energy

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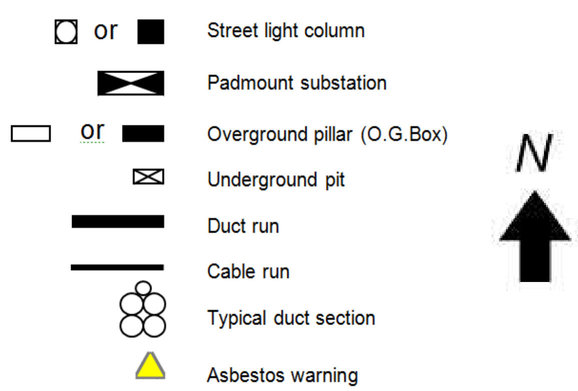
INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

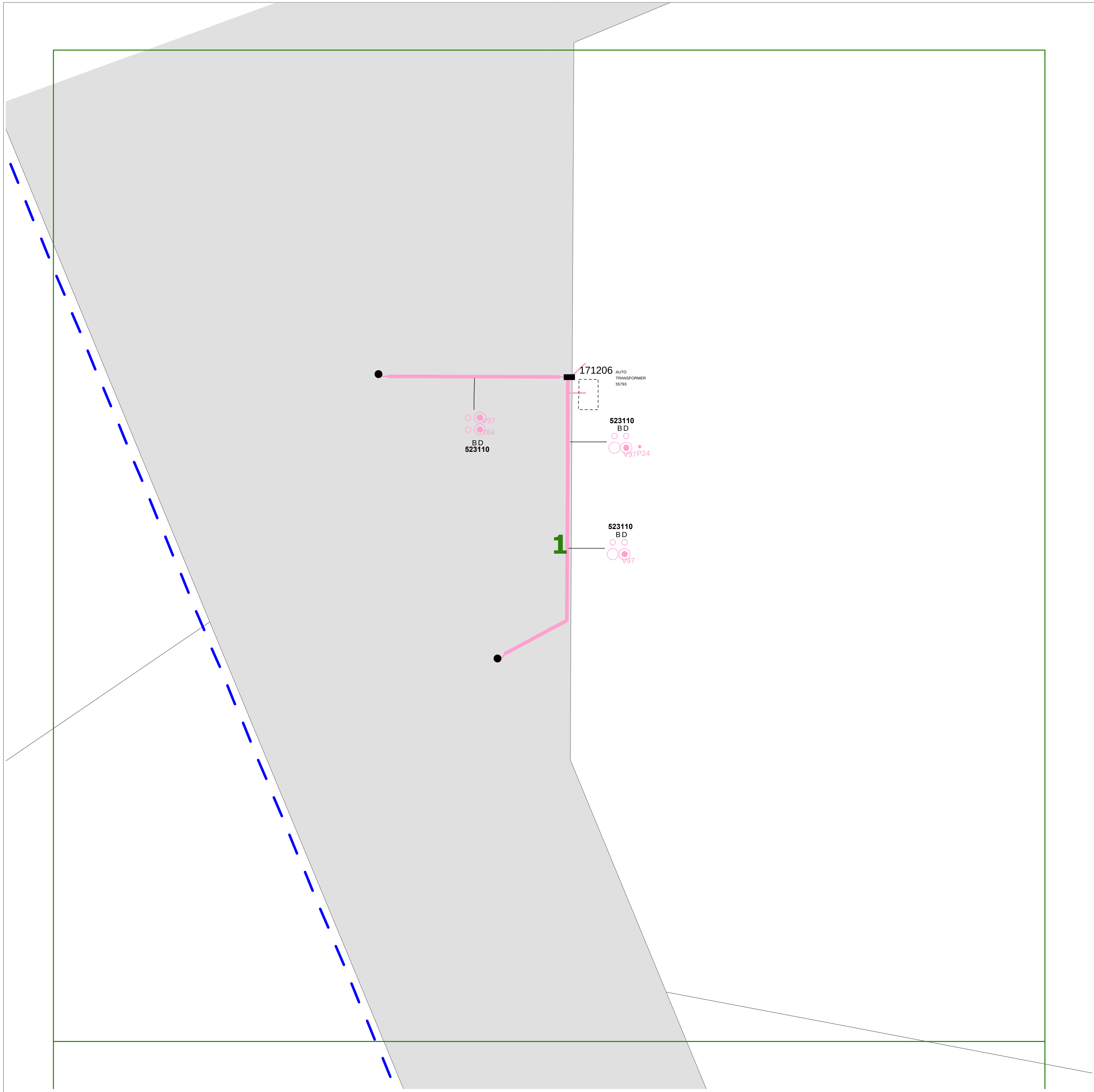
DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.



NOT TO SCALE

DBYD Sequence No.:	221801111
Issued Date:	01/03/2023



Endeavour Energy

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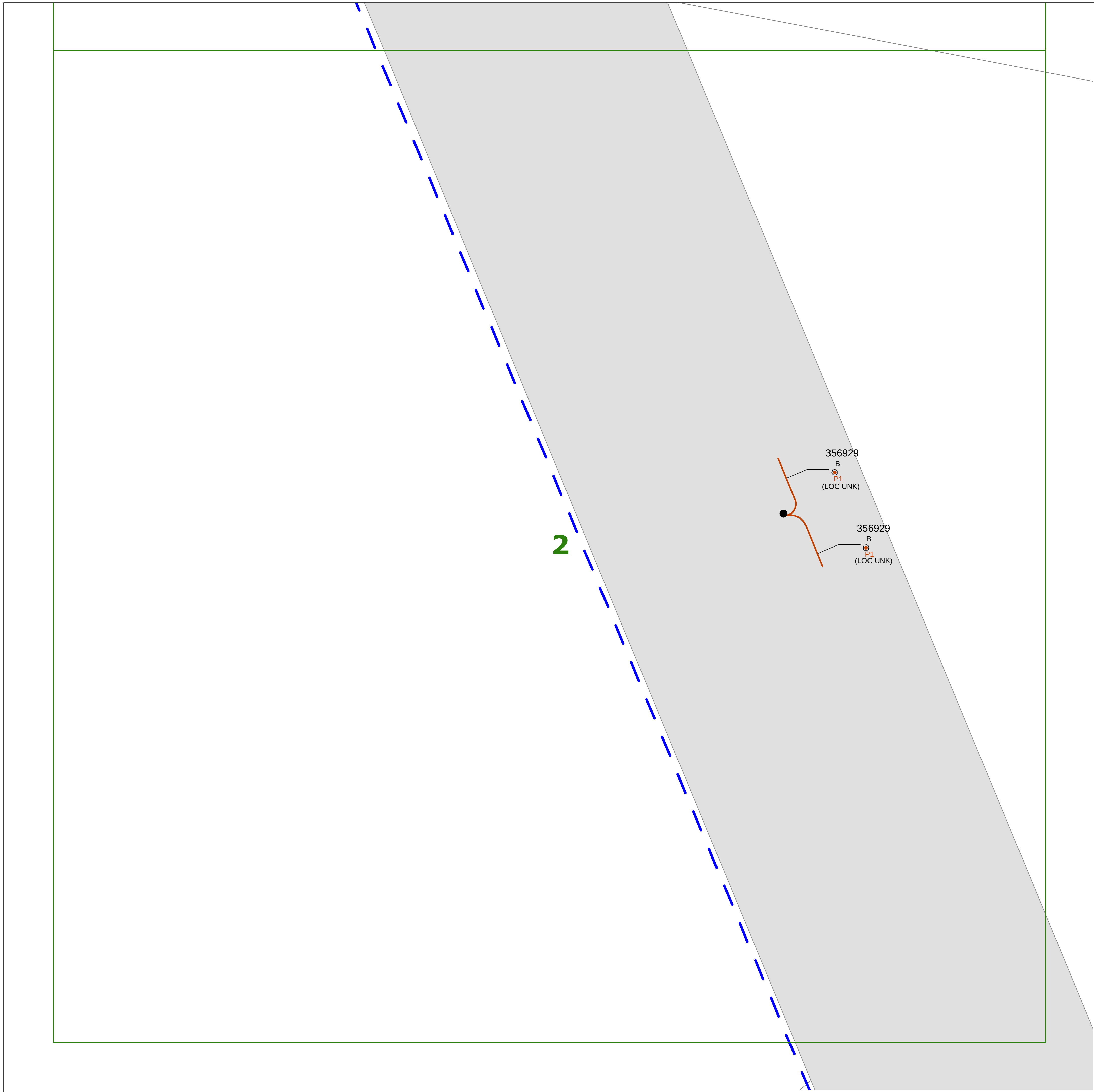
or — Street light column
Padmount substation
or — Overground pillar (O.G.Box)
Underground pit
Duct run
Cable run
Typical duct section
Asbestos warning

N

NOT TO SCALE

DBYD Sequence No.:	221801111
Issued Date:	01/03/2023



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- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be made available at the worksite where excavation is to be undertaken in either printed or electronic format. If the plans are in an electronic format, they must be in a format visible on a screen size 10 inches or greater. Plans must be reviewed and understood by the crew on site prior to commencing excavation.
- Non-destructive water excavation must be operated at or below 2000PSI. Any operation exceeding 2000PSI must be classed and treated as a destructive excavation practice

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

or Street light column
Padmount substation
or Overground pillar (O.G.Box)
Underground pit
Duct run
Cable run
Typical duct section
Asbestos warning

N

NOT TO SCALE

DBYD Sequence No.:	221801111
Issued Date:	01/03/2023

PENRITH CITY COUNCIL

Sequence No: 221801108
Job No: 33723003
Location: 1016-1028 Mamre Road, Kemps Creek, NSW 2178

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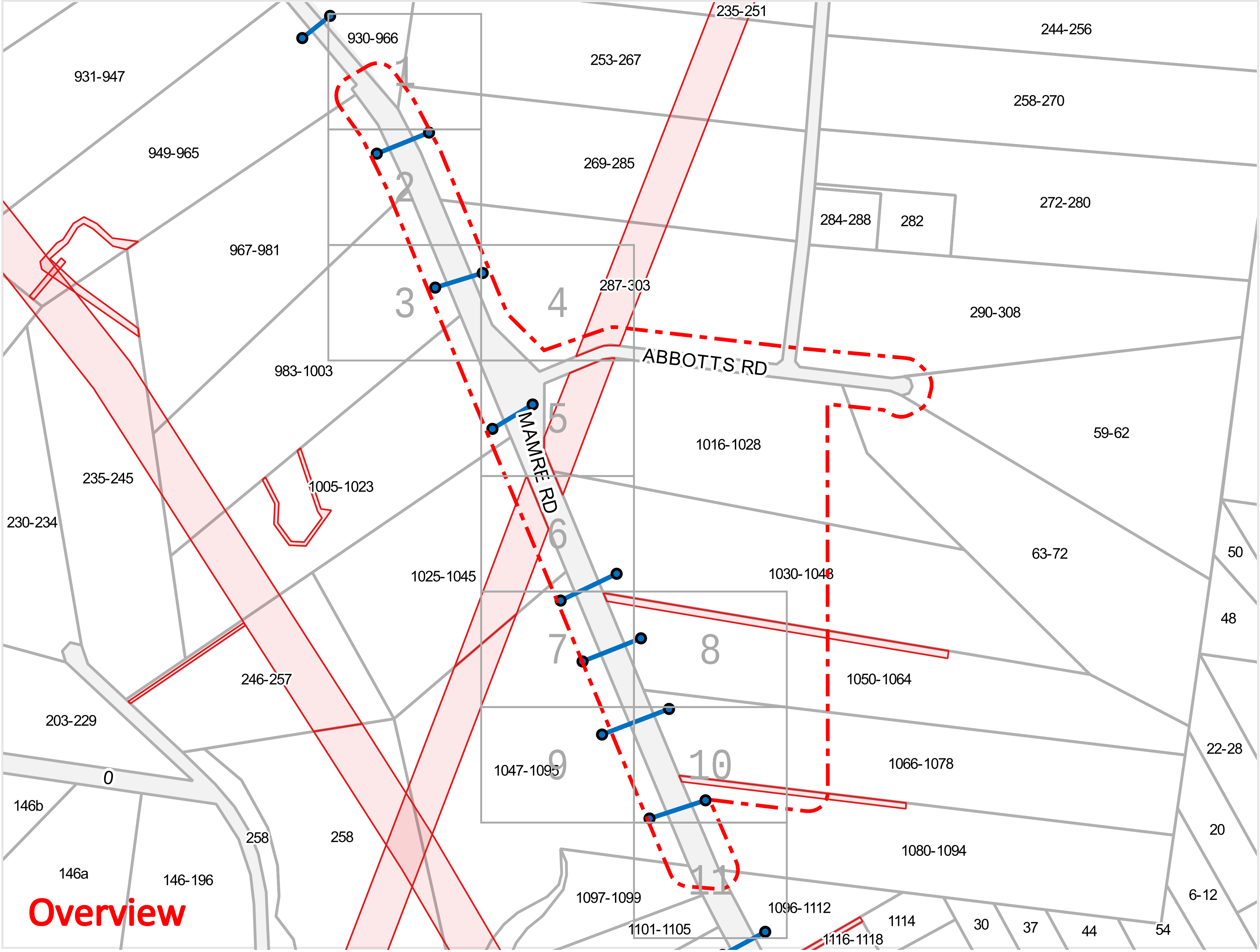

Legend

- Stormwater Pit
- Stormwater Line
- Easement
- Groundwater Monitoring Well (PSM)
- Groundwater Monitoring Well (JB&G)

N

Scale: 1:8200
Expires: 29 Mar 2023

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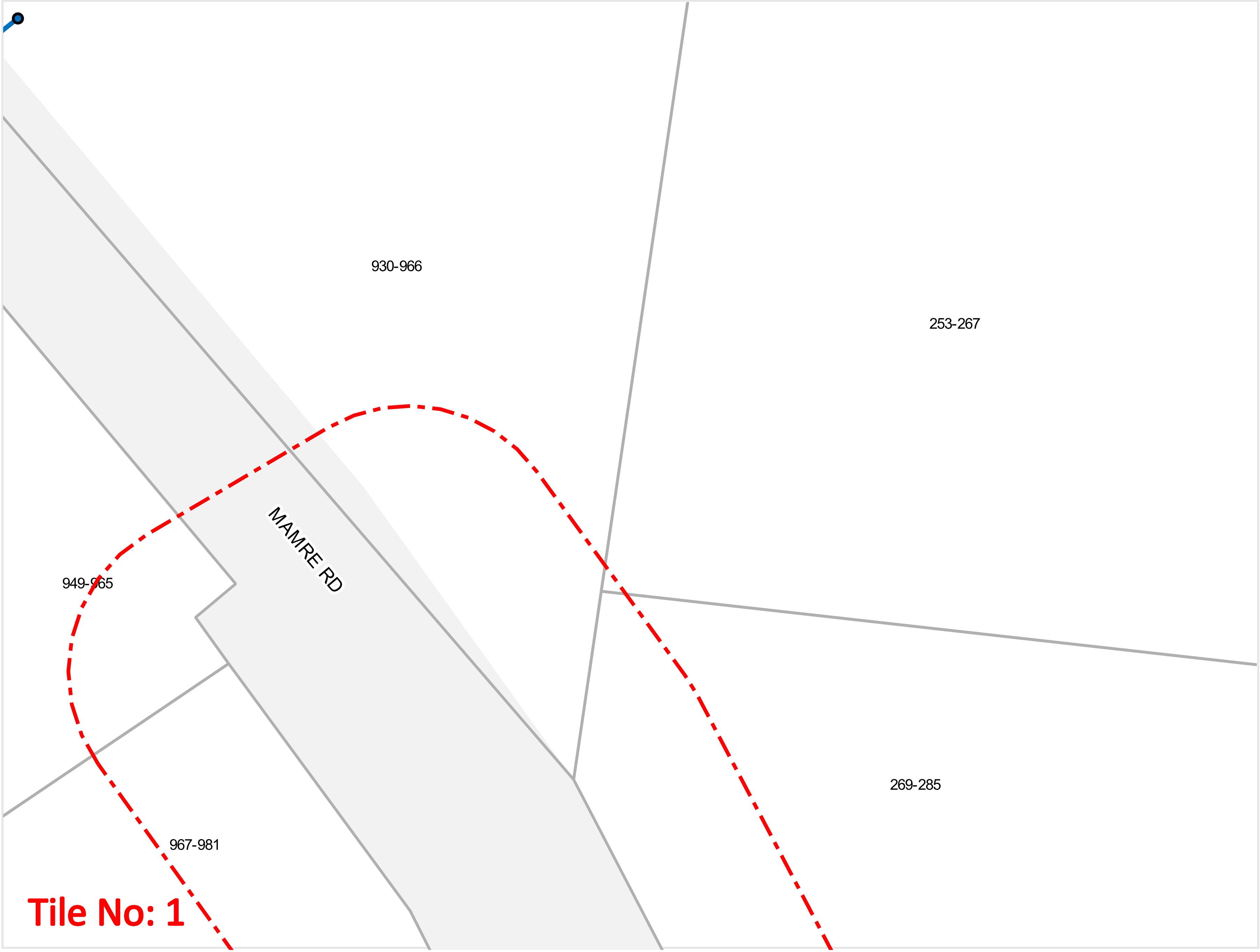

Legend

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Scale: 1:1000
Expires: 29 Mar 2023

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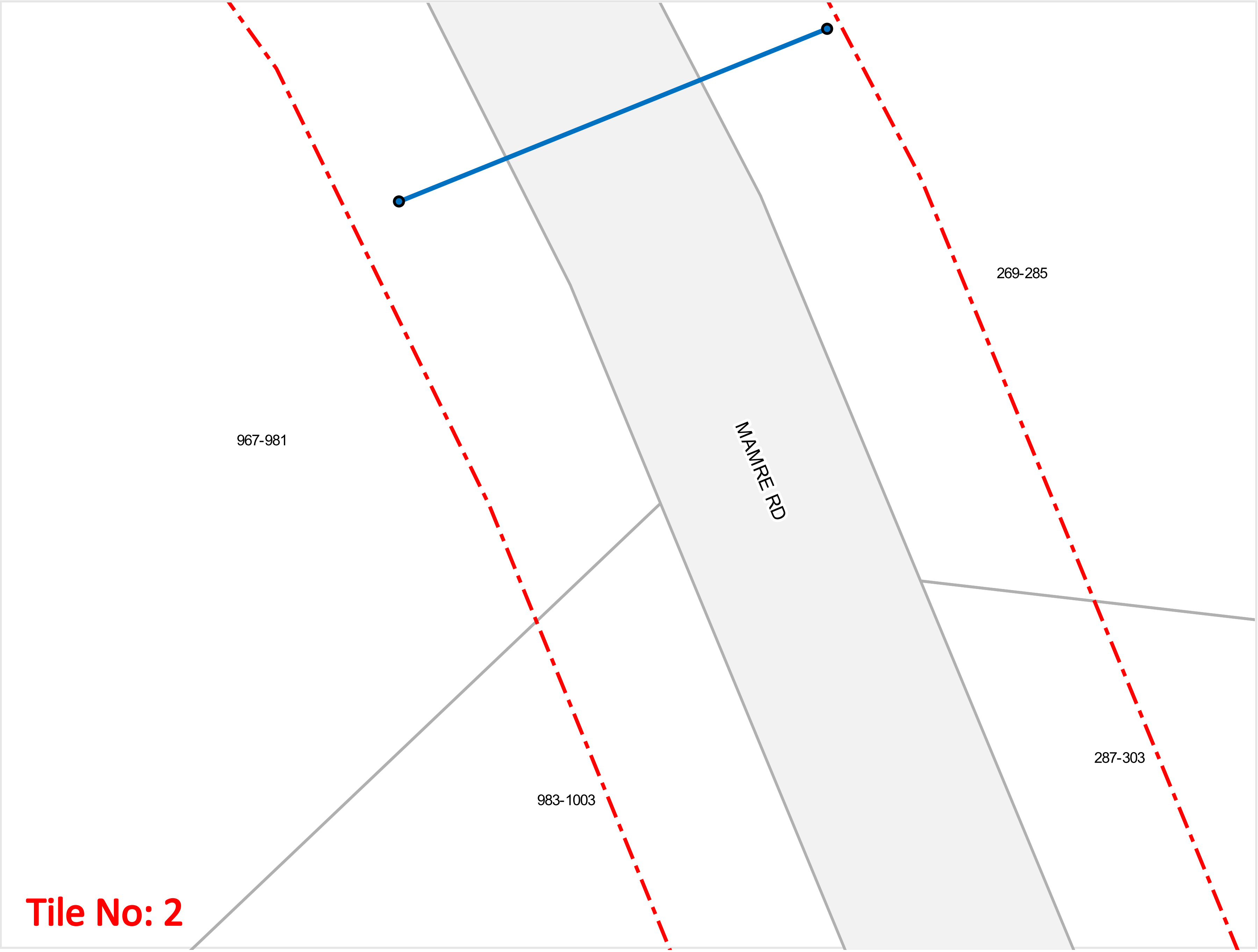

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PENRITH
CITY COUNCIL

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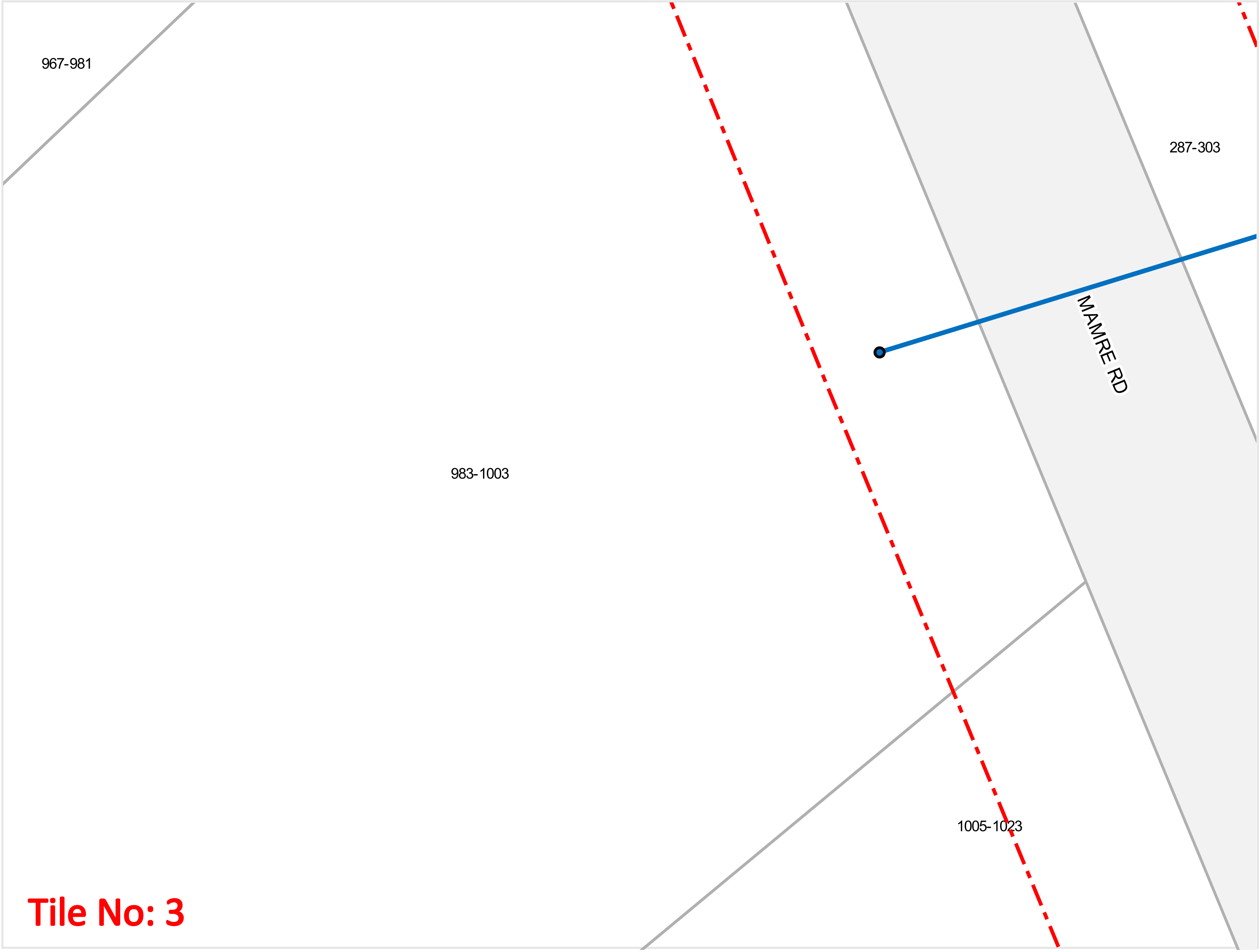

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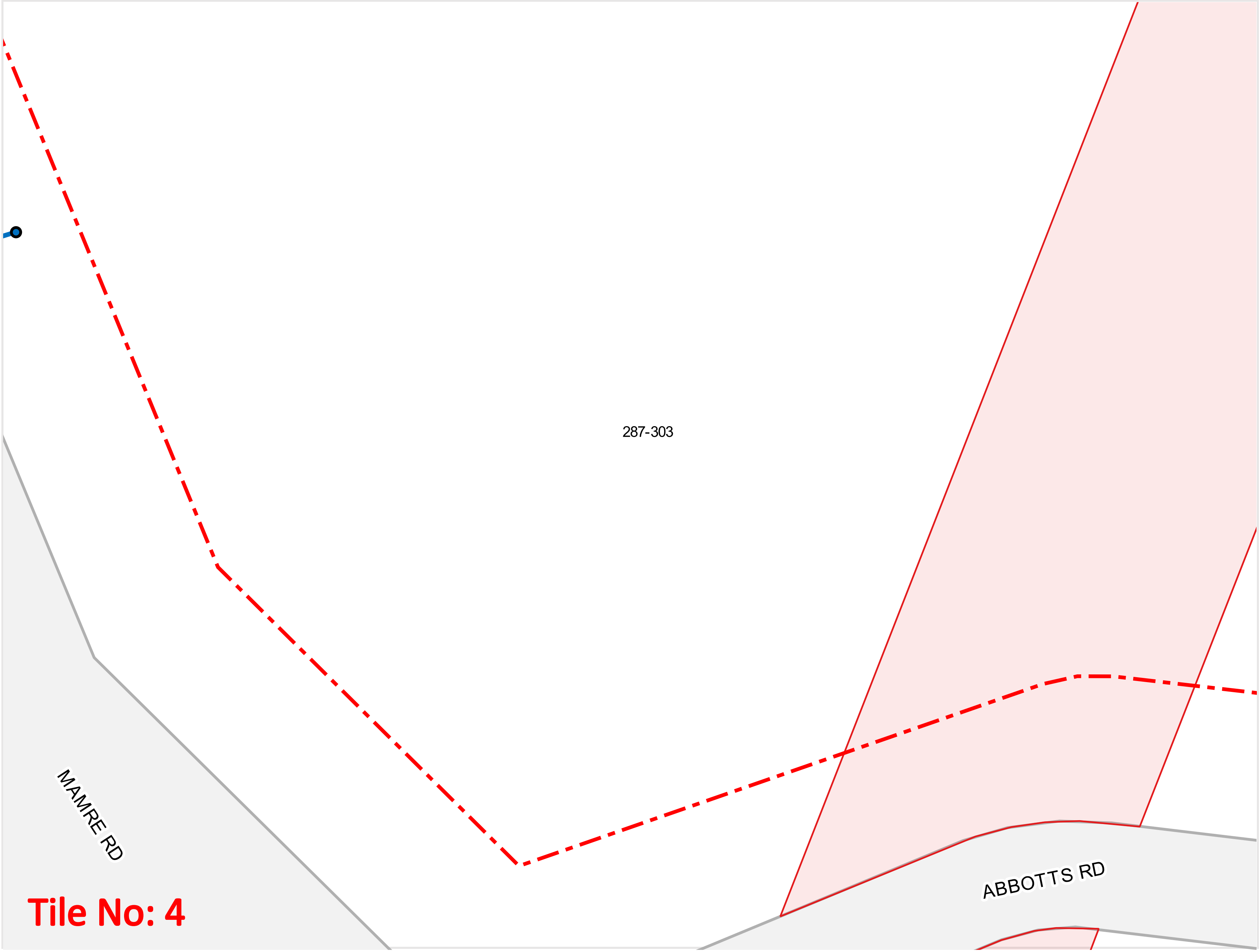

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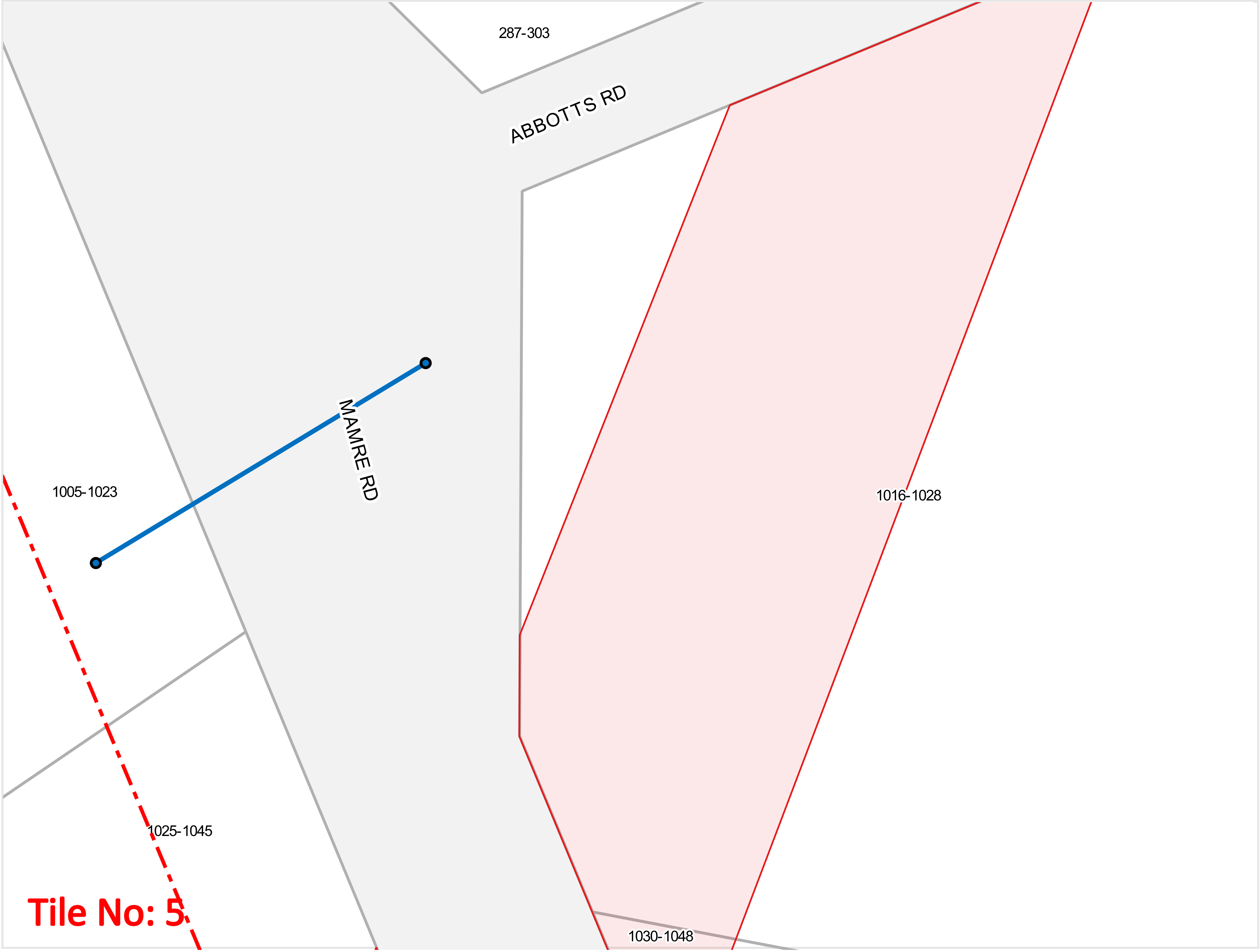

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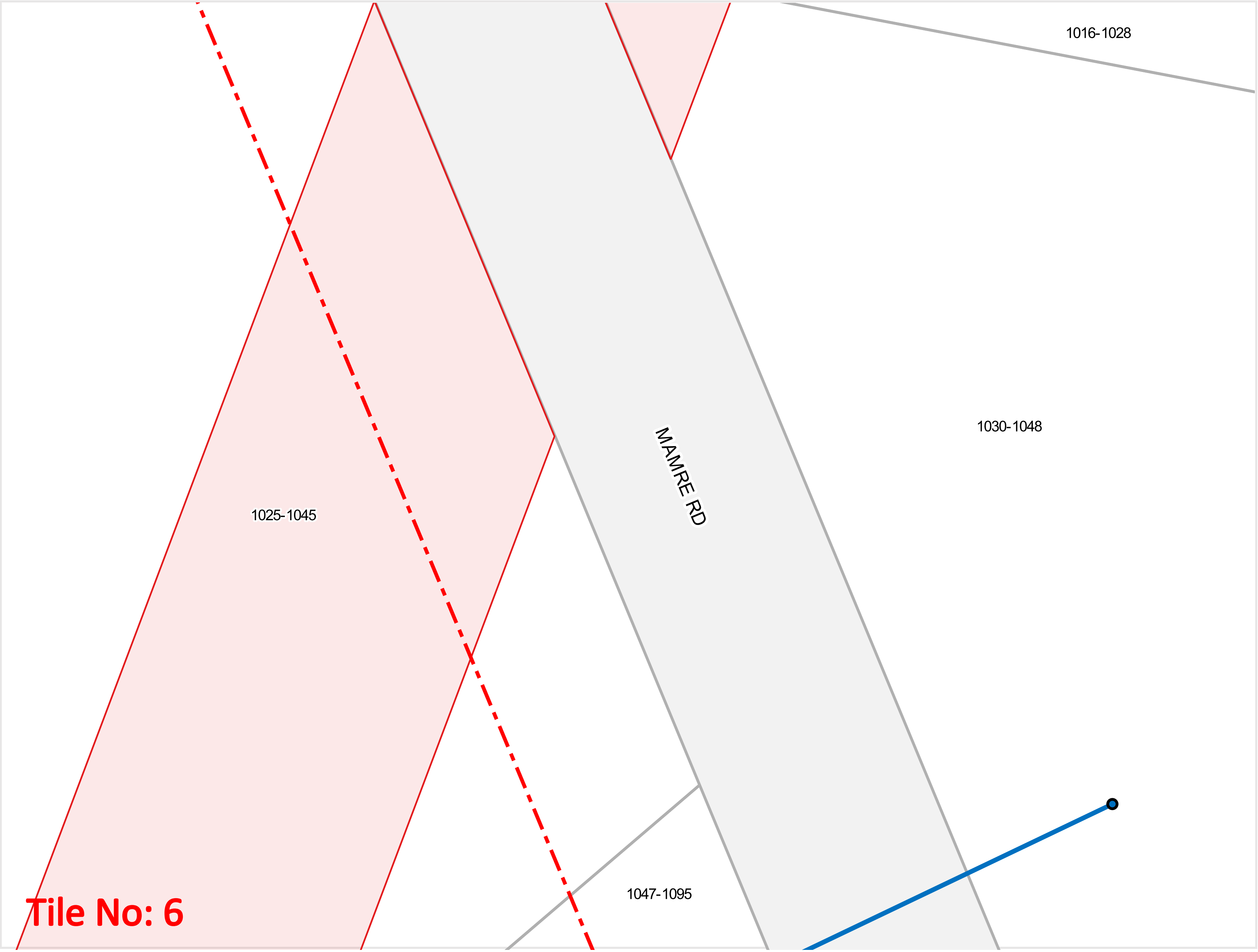

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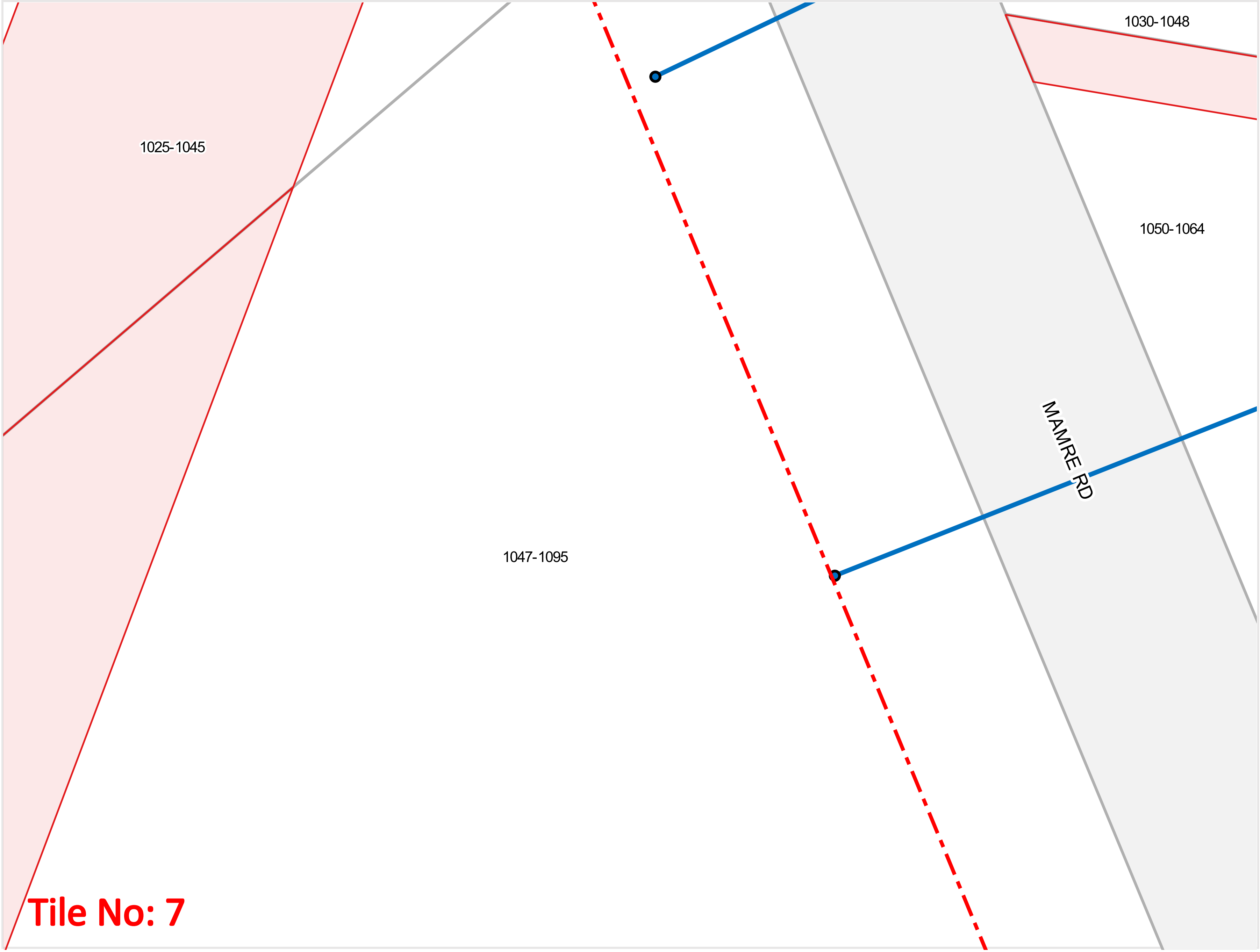

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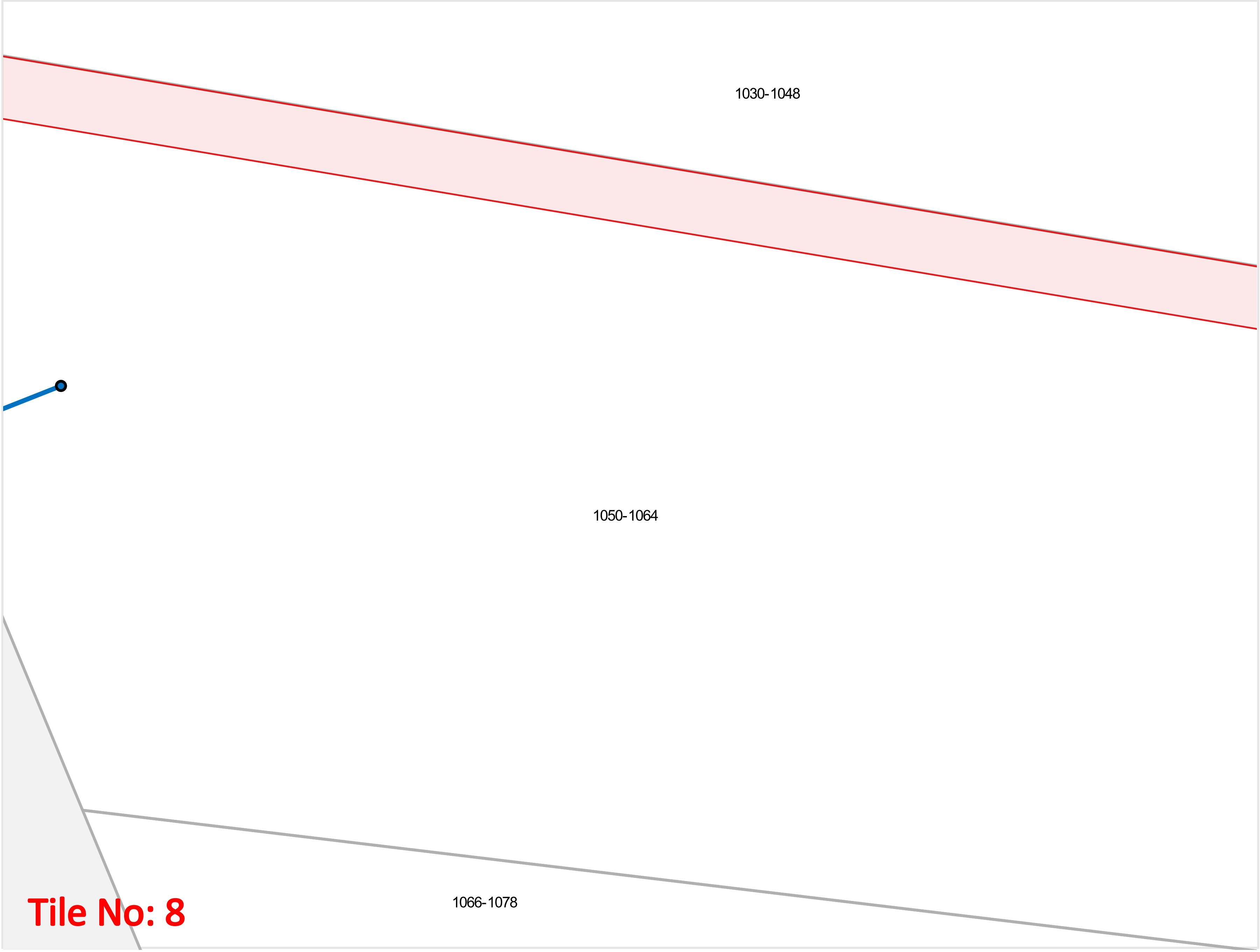

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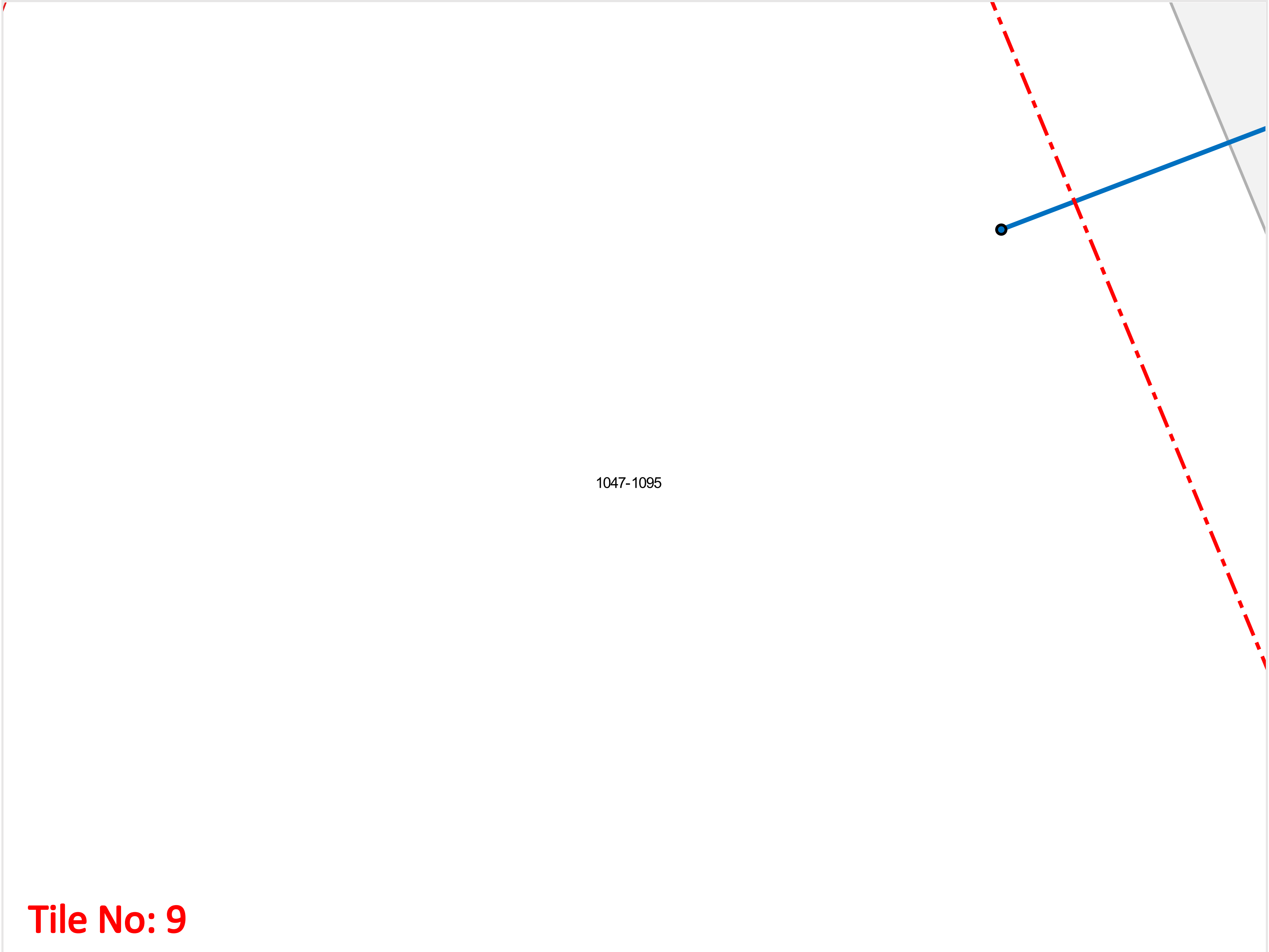

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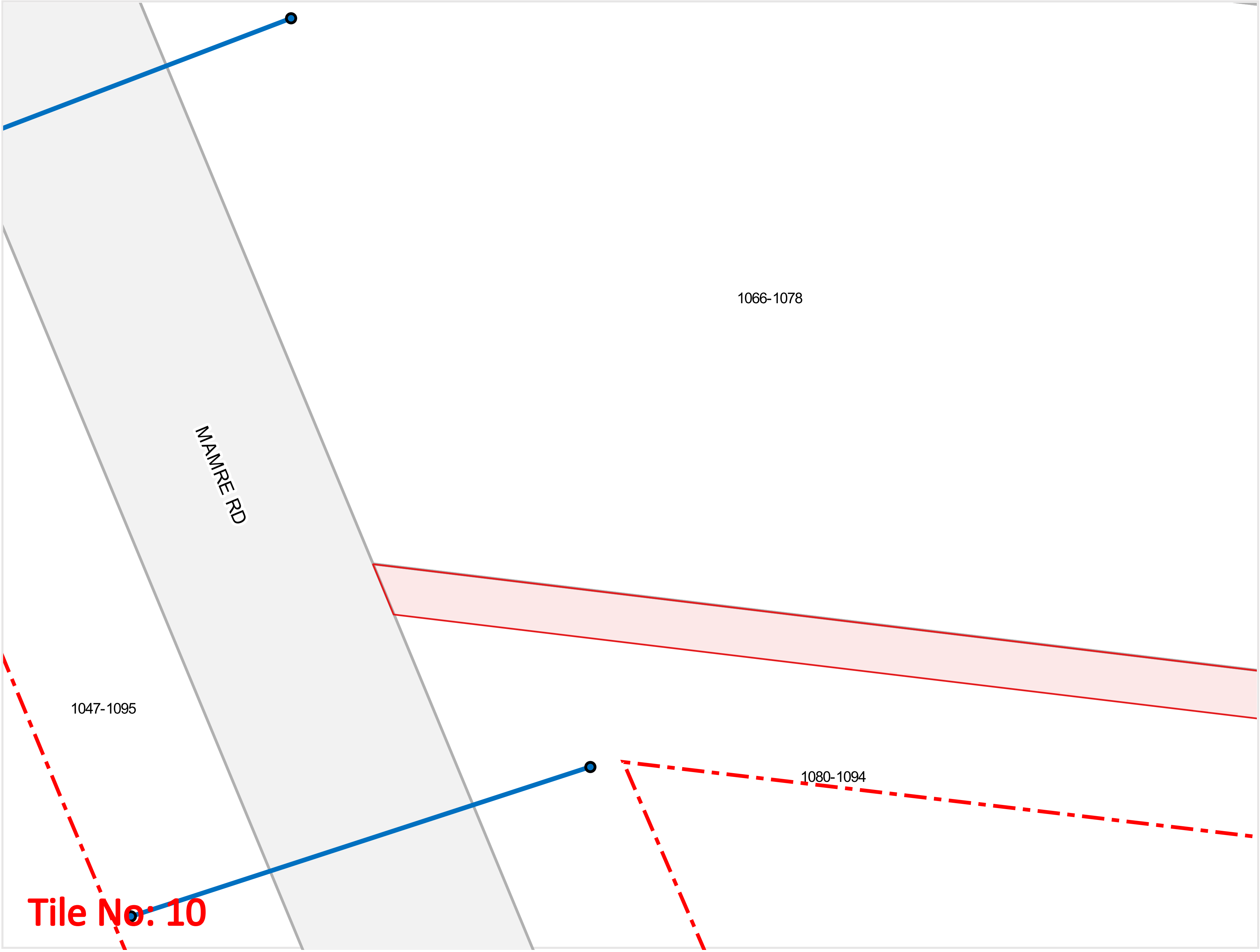

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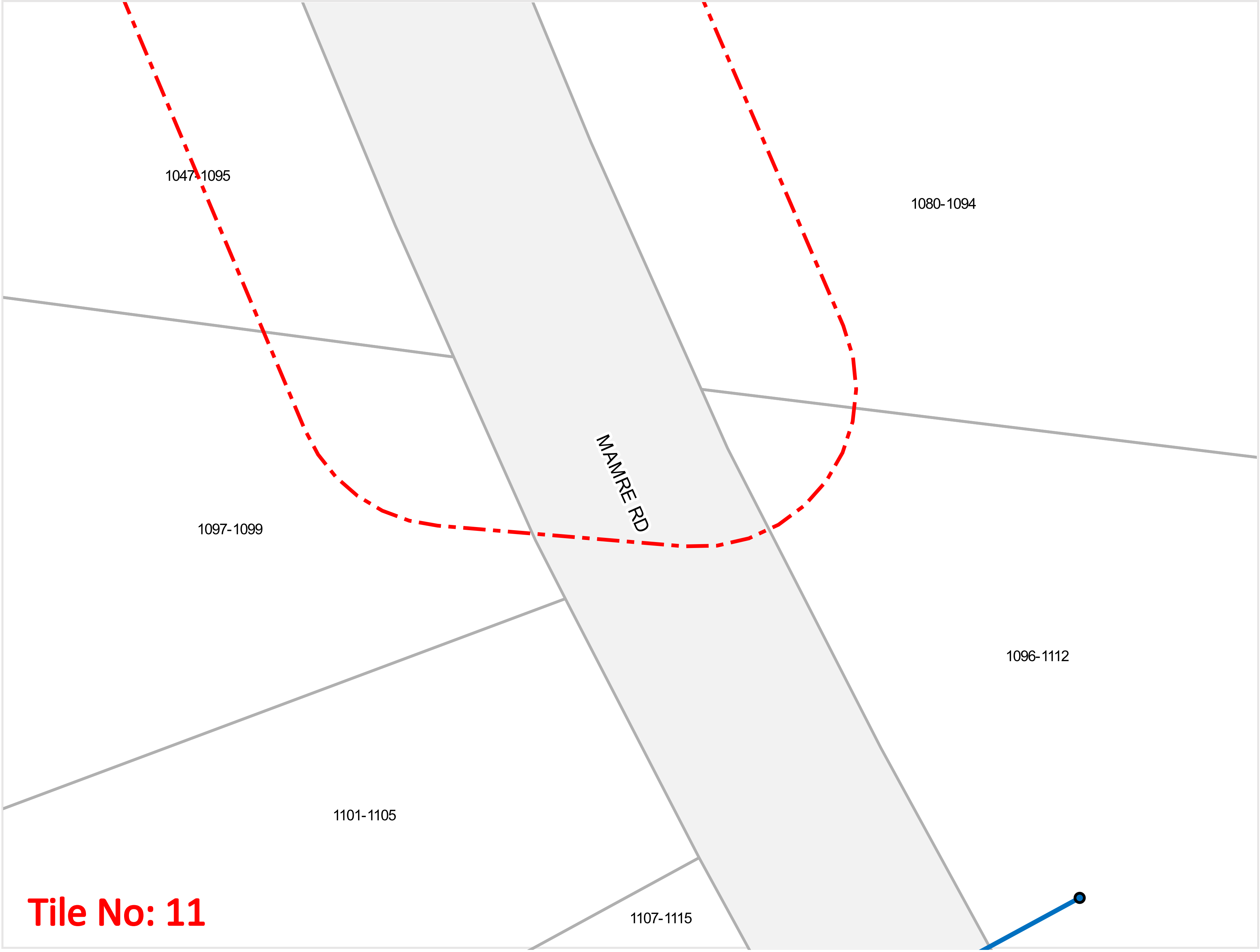

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Guide to reading Sydney Water DBYD Plans

DIAL BEFORE YOU DIG
www.1100.com.au

This guide will help you understand our plans and what our services are.

Symbol	Meaning	Symbol	Meaning
225 PVC	Sewer main with flow arrow and size type text.		Sewer vertical
	Disuses sewer main This means the sewer has been disused but remains in the ground.	SP0882	Sewer pumping station
1.7	Sewer maintenance hole with upstream depth invert.		
	Sewer Sub-surface chamber		Pressure sewer main These are also found in Vacuum sewer areas.
	Sewer Maintenance hole with overflow chamber		Pressure sewer Pump unit Alarm, electrical cable and pump unit.
	Sewer Ventshaft EDUCT		Pressure sewer property valve boundary assembly
	Sewer Ventshaft IDUCT		Pressure sewer stop valve
10.6	Sewer property connection point With chainage to downstream maintenance hole.		Pressure sewer reducer / taper
Concrete Encased	Sewer concrete encased section		Pressure sewer flushing point
	Sewer Rehabilitation		Vacuum sewer division valve
TMS	Sewer terminal maintenance shaft		Vacuum sewer vacuum chamber
MS	Sewer maintenance shaft		Vacuum sewer clean out pot
	Sewer rodding point		Stormwater pipe
	Sewer lamphole		Stormwater channel

Symbol	Meaning	Symbol	Meaning
	Stormwater gully		Potable water stop valves with Tapers
	Stormwater maintenance hole		Potable water closed stop valve
200 PVC	Watermain – potable drinking water With size type text.		
	Disconnected watermain potable drinking water This means the watermain has been disused but remains in the ground.		Potable water air valve
	Recycled watermain		Potable water valve
	Special supply conditions – potable drinking water		Potable water scour
	Special supply conditions – recycled water		Potable water reducer / taper
	Restrained joints – Potable drinking water		Potable water vertical bends
	Sewer concrete encased section		Potable water reservoir
	Restrained joints – Potable drinking water		Recycled water is shown as per potable above. Colour as indicated
	Potable water hydrant		Private potable water main
	Potable water maintenance hole		Private recycled water main
	Potable water stop valve		Private sewer main
	Potable water stop valve with By-pass		

Pipe types

PIPE TYPES		PIPE TYPES	
ABS	Acrylonitrile Butadiene Styrene	**AC**	Asbestos Cement
BRICK	Brick	**CI**	Cast Iron
CICL	Cast Iron Cement Lined	**CONC**	Concrete
COPPER	Copper	**DI**	Ductile Iron
DICL	Ductile Iron Cement (mortar) Lined	**DIPL**	Ductile Iron Polymeric Lined
EW	Earthenware	**FIBG**	Fibreglass
FL BAR	Forged Locking Bar	**GI**	Galvanised Iron
GRP	Glass Reinforced Plastics	**HDPE**	High Density Polyethylene
MS	Mild Steel	**MSCL**	Mild Steel Cement Lined
IPE	Polyethylene	**PC**	Polymer Concrete
PP	Polypropylene	**PVC**	Polyvinylchloride
PVC - M	Polyvinylchloride, Modified	**PVC - 0**	Polyvinylchloride, Oriented
PVC - U	Polyvinylchloride, Unplasticised	**RC**	Reinforced Concrete
RC-PL	Reinforced Concrete Plastics Lined	**S**	Steel
SCL	Steel Cement (mortar) Lined	**SCL IBL**	Steel Cement Lined Internal Bitumen
SGW	Salt Glazed Ware	**SPL**	Steel Polymeric Lined
SS	Stainless Steel	**STONE**	Stone
VC	Vitrified Clay	**WI**	Wrought Iron
WS	Woodstave		

Further Information

Please consult the Dial Before You Dig enquiries page on our website.

For general enquiries please call the Customer Contact Centre on 132 092

In an emergency, or to notify Sydney Water of damage or threats to its structures, call 13 20 90 (24 hours, 7 days)

DBYD Address:
1016-1028 Mamre Road
Kemps Creek NSW 2178

DBYD Job No: 33723003

DBYD Sequence No: 221801110

SYDNEY WATER CORPORATION

Scale: 1:2000

Date of Production: 01/03/2023

N

Plan 1 of 1

0m 30m 60m 90m 120m 150m

ADE CONSULTING GROUP
SOLUTIONS THROUGH INNOVATION

Further details regarding ADE's Services are available via

info@ade.group www.ade.group

ADE Consulting Group Pty Ltd

Sydney
Unit 6/7 Millennium Court,
Silverwater, NSW 2128 Australia

Newcastle
Unit 9/103 Glenwood Drive
Thornton, NSW 2322, Australia

ADE Consulting Group (QLD) Pty Ltd

Brisbane
Unit 3/22 Palmer Place
Murarrie, QLD 4172, Australia

ADE Consulting Group (VIC) Pty Ltd

Melbourne
Unit 4/95 Salmon Street
Port Melbourne, VIC 3207, Australia