REPORT TO

NSW DEPARTMENT OF EDUCATION

ON

PRELIMINARY SITE INVESTIGATION

FOR

NEW HIGH SCHOOL IN BUNGENDORE

AT

BIRCHFIELD DRIVE, BUNGENDORE, NSW

Date: 17 March 2025
Ref: E37084PTrptRev4

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E37084PTrptRev2	Revision – Update to client site description	21 February 2025
E37084PTrptRev3	Revision – Update to REF preamble requested by client	25 February 2025
E37084PTrptRev4	Revision – Update to REF preamble requested by client	17 March 2025

Executive Summary

NSW Department of Education ('the client') commissioned JK Environments (JKE) to undertake a Preliminary Site Investigation (PSI) for the high school in Bungendore at Birchfield Drive, Bungendore, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 in Appendix A.

A geotechnical investigation was undertaken in conjunction with this PSI by JK Geotechnics (JKG). The results of the geotechnical investigation are presented in a separate report (Project ref: 37083LT). This report should be read in conjunction with the JKG report.

The primary aims of the investigation were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil and groundwater contamination conditions. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
- Assess the soil contamination conditions via implementation of a preliminary sampling and analysis program;
- Prepare a conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed activity (from a contamination viewpoint); and
- Assess whether further intrusive investigation and/or remediation is required.

The scope of work included the following:

- Review of site information, including background and site history information from various sources outlined in the report;
- Preparation of a CSM;
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment; and
- Preparation of a report including a Tier 1 risk assessment.

The PSI included a review of site history information, a site inspection and soil sampling from 35 boreholes. The following potential contamination sources were identified: fill material and historic agricultural (grazing) land use.

The boreholes generally encountered natural soils from the surface of the site underlain by sandstone, siltstone, and mudstone bedrock. Fill material was encountered in four locations only and extended to depths of approximately 0.2m below ground level (BGL) to 1.4mBGL. The fill contained inclusions of ironstone and quartz gravels, ash and root fibres. A selection of soil samples was analysed for the CoPC identified in the CSM. Elevated concentrations of the CoPC were not encountered above the adopted SAC.

Based on the Tier 1 risk assessment, JKE are of the opinion that potential risks associated with the CoPC at the site are low and the data collected during the investigation suggests that significant and widespread contamination issues are unlikely to be encountered.

Further investigation and/or remediation is not considered to be required and the site is considered to be suitable for the proposed activity outlined in Section 1.2, from a contamination viewpoint. To compensate for the low sampling density completed for the PSI, we recommend that a robust unexpected finds protocol be prepared by a suitably qualified environmental consultant and that this protocol be implemented during the development/construction phase of the project.

Preliminary waste classifications are discussed in Section 10. In JKE's opinion, all fill will classify as 'General Solid Waste (non-putrescible)'. Confirmatory waste classification assessment is required.

JKE consider that the report objectives outlined in Section 2.1 have been addressed.

JKE was requested by the client to include a table to support the contamination-related risk mitigation measures to be included in the Review of Environmental Factors (REF). Mitigation measures to avoid, minimise, rectify and/or reduce or eliminate over time the adverse environmental impacts identified in the PSI are outlined in the table below:

Mitigation Number / Name	Aspect / Section	Mitigation Measure	Reason for Mitigation Measure
Unexpected Finds Protocol	During development / construction	Preparation of an Unexpected Finds Protocol	To compensate for the low sampling density completed for the PSI, which included sampling from boreholes, we recommend that a robust unexpected finds protocol be prepared by a suitably qualified environmental consultant[1] and that this protocol be implemented during the development/construction phase of the project.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of this report.

[1] JKE recommend that the consultancy engaged for the work be a member of the Australian Contaminated Land Consultants Associated (ACLCA), and/or the individual undertaking the works be certified under one of the NSW EPA endorsed certified practitioner schemes

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Abbreviations

Asbestos Fines/Fibrous Asbestos	**AF/FA**
Ambient Background Concentrations	**ABC**
Added Contaminant Limits	**ACL**
Asbestos Containing Material	**ACM**
Australian Drinking Water Guidelines	**ADWG**
Area of Environmental Concern	**AEC**
Australian Height Datum	**AHD**
Acid Sulfate Soil	**ASS**
Before You Dig Australia	**BYDA**
Below Ground Level	**BGL**
Benzo(a)pyrene Toxicity Equivalent Factor	**BaP TEQ**
Bureau of Meteorology	**BOM**
Benzene, Toluene, Ethylbenzene, Xylene	**BTEX**
Cation Exchange Capacity	**CEC**
Contaminated Land Management	**CLM**
Contaminant(s) of Potential Concern	**CoPC**
Chain of Custody	**COC**
Covered Outdoor Learning Area	**COLA**
Conceptual Site Model	**CSM**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Detailed Site Investigation	**DSI**
Department of Education	**DoE**
Department of Planning, Housing and Infrastructure	**DPHI**
Ecological Investigation Level	**EIL**
Ecological Screening Level	**ESL**
Environment Protection Authority	**EPA**
Health Investigation Level	**HIL**
Health Screening Level	**HSL**
International Organisation of Standardisation	**ISO**
JK Environments	**JKE**
JK Geotechnics	**JKG**
Lab Control Spike	**LCS**
Light Non-Aqueous Phase Liquid	**LNAPL**
Map Grid of Australia	**MGA**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Polychlorinated Biphenyls	**PCB**
Per-and Polyfluoroalkyl Substances	**PFAS**
Photo-ionisation Detector	**PID**
Protection of the Environment Operations	**POEO**
Practical Quantitation Limit	**PQL**
Quality Assurance	**QA**
Quality Control	**QC**
Remediation Action Plan	**RAP**
Relative Level	**RL**
Review of Environmental Factors	**REF**
Relative Percentage Difference	**RPD**
Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**

Special Education Learning Unit	**SELU**
State Environmental Planning Policy	**SEPP**
Source, Pathway, Receptor	**SPR**
Standard Penetration Test	**SPT**
Standing Water Level	**SWL**
Trip Blank	**TB**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Virgin Excavated Natural Material	**VENM**
Volatile Organic Compounds	**VOC**
World Health Organisation	**WHO**

Units

Litres	**L**
Metres BGL	**mBGL**
Metres	**m**
Millilitres	**ml or mL**
Micrograms per Litre	**µg/L**
Milligrams per Kilogram	**mg/kg**
Milligrams per Litre	**mg/L**
Parts Per Million	**ppm**
Percentage	**%**
Percentage weight for weight	**%w/w**

1 REF PREAMBLE

This Preliminary Site Investigation (PSI) has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (DoE) for the construction and operation of the new high school at Bungendore (the activity).

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37A of the T&I SEPP.

The REF has been prepared in accordance with the *Guidelines for Division 5.1 assessments* (the Guidelines) by the Department of Planning, Housing and Infrastructure (DPHI) as well as the *Addendum Division 5.1 guidelines for schools* and *Addendum October 2024 (Consideration of environmental factors for health services facilities and schools*). The purpose of this PSI report is to make a preliminary assessment of site contamination.

1.1 Client Provided Site Description

The current street address is part of 18 Harp Avenue, Bungendore, NSW, 2621 (the site), and is legally described as part Lot 125 in Deposited Plan 1297613. As shown on Figure 1 below, the proposed school site forms part of a larger lot which is the subject of a proposed residential subdivision.

The site is located within the North Bungendore Precinct (Elm Grove Estate) in Bungendore. As a result of precinct wide rezonings, the surrounding locality is currently transitioning from a semi-rural residential area to an urbanised area with new low density residential development.

The site is zoned R2 Low Density Residential, with all adjoining land also zoned R2 Low Density Residential. The site has three frontages:

- Approx 500m southern frontage to Birchfield Drive;
- Approx 500m northern frontage to Bridget Avenue; and
- Approx 100m eastern frontage to Winyu Rise.

The site is currently cleared of all vegetation and consists of grassland, having been prepared for the purposes of future low density residential development.

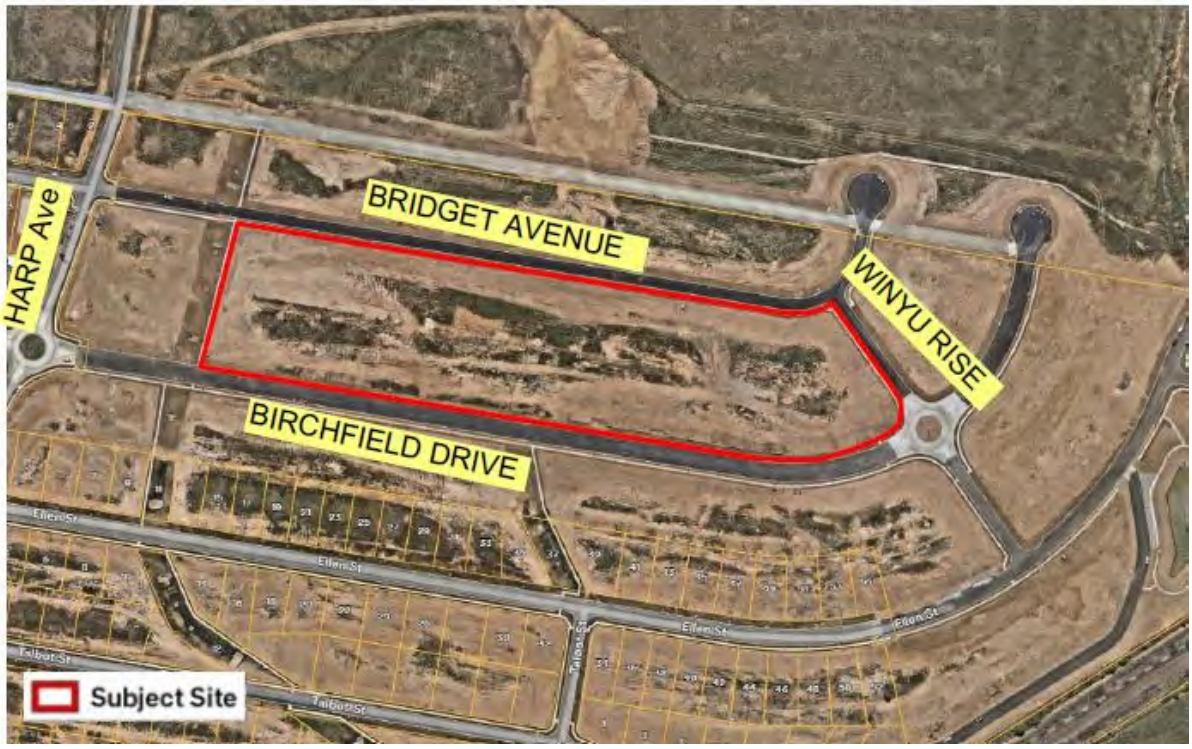

Figure 1 Aerial Photograph of the Site.
Source: Urbis 2024

1.2 Client Provided Project Description

The proposed activity is for the construction and operation of a new high school in Bungendore at part 18 Harp Avenue, Bungendore (the site). The new high school will accommodate 600 students and 68 staff. The school will provide 26 general learning spaces, and three support learning spaces across two buildings. The buildings will be predominantly three-storeys in height and will include permanent and support teaching spaces, specialist learning hubs, a library, administrative areas and a staff hub.

Additional core facilities are also proposed including a standalone school hall with covered outdoor learning area (COLA), a car park, a kiss and drop zone along Birchfield Drive, sports courts and a sports field. The new school also features a single storey building with associated paddocks in the far western portion of the site designed for livestock management and hands-on agricultural learning.
Specifically, the proposal involves the following:

- Building A, a three-storey learning hub accommodating general learning spaces, a special education learning unit (SELU), a physical education centre, a performing arts space, and other core facilities including administrative areas, staff hub, library and end of trip facilities.
- Building B, a part three/part four storey learning hub accommodating general learning spaces, specialist workshops for food, textile, wood and metal workshops, as well as visual arts studios, science labs and staff areas.
- Building C, a standalone school hall with COLA.
- Building D, a single-storey agricultural block comprising an animal storage space, a COLA and internal workshop.
- On-site staff car park with 50 spaces with access via Bridget Avenue.
- Kiss and drop zones and bus bays along Birchfield Drive.

- Open play space including a sports courts and sports field.
- Associated utilities and services including a 1000kv padmount substation.
- Main pedestrian entrance to be located off Birchfield Drive.
- Secondary pedestrian access from Bridget Avenue.
- Public domain/off-site works including the removal of street trees.

The design has been master planned to allow for an additional future stage. The second stage does not form part of this proposal.

Figure 2 below provides an extract of the proposed site plan.

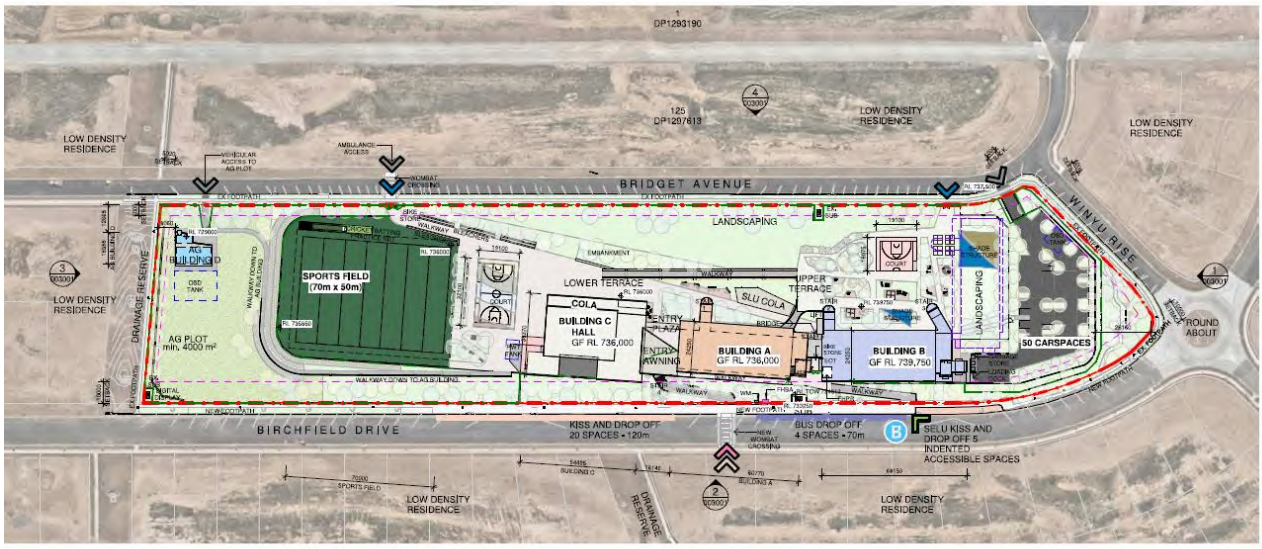

Figure 2 Site Plan
Source: NBRS, 2024

2 PSI INTRODUCTION

NSW Department of Education ('the client') commissioned JK Environments (JKE) to undertake a Preliminary Site Investigation (PSI) for the new high school in Bungendore at Birchfield Drive, Bungendore, NSW ('the site'). The purpose of the investigation is to make a preliminary assessment of site contamination. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2 in Appendix A.

A geotechnical investigation was undertaken in conjunction with this PSI by JK Geotechnics (JKG). The results of the geotechnical investigation are presented in a separate report (Project ref: 37083LT). This report should be read in conjunction with the JKG report.

2.1 Aims and Objectives

The primary aims of the investigation were to identify any past or present potentially contaminating activities at the site, identify the potential for site contamination, and make a preliminary assessment of the soil and groundwater contamination conditions. The objectives were to:

- Provide an appraisal of the past site use(s) based on a review of historical records;
- Assess the current site conditions and use(s) via a site walkover inspection;
- Identify potential contamination sources/areas of environmental concern (AEC) and contaminants of potential concern (CoPC);
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- Prepare a conceptual site model (CSM);
- Assess the potential risks posed by contamination to the receptors identified in the CSM (Tier 1 assessment);
- Provide a preliminary waste classification for off-site disposal of soil;
- Assess whether the site is suitable or can be made suitable for the proposed activity (from a contamination viewpoint); and
- Assess whether further intrusive investigation and/or remediation is required.

2.2 Scope of Work

The investigation was undertaken generally in accordance with a JKG proposal (Ref: P70074LTrev1) of 11 September 2024 and written acceptance from the client for Contract Variation 1 – DDWO05439/23 of 17 September 2024 under Purchase Order (PO): 4004325353. The scope of work included the following:

- Review of site information, including background and site history information from various sources outlined in the report;
- Preparation of a CSM;
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment; and
- Preparation of a report including a Tier 1 risk assessment.

The scope of work was undertaken with reference to the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)[2], other guidelines made under or with regards to the Contaminated Land Management Act (1997)[3] and Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021[4] (formerly known as SEPP55). A list of reference documents/guidelines is included in the appendices.

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

[3] Contaminated Land Management Act 1997 (NSW) (referred to as CLM Act 1997)

[4] *State Environmental Planning Policy (Resilience and Hazards) 2021* (NSW) (referred to as SEPP Resilience and Hazards 2021)

3 SITE INFORMATION

3.1 Background Information

The client provided a copy of the following report for information purposes:

- Douglas Partners (2017) Addendum to Preliminary Site Investigation, Proposed Residential Development, Lot 1 in DP798111, Bungendore (Document ref: 88336.02.LR.001.Rev1, dated September 2017).

The report was prepared for the site and wider Lot to support a planning proposal for development of the area as a residential estate. Relevant information from the report is summarised as follows:

- The site history review indicated that the area of the investigation, including the site, was and had been arable farmland used for grazing;
- An unlined landfill neighboured the area of investigation to the north (however we note this was located over 1km to the west of the site);
- AEC applicable to the site included: agricultural land use. The other AEC identified in the DP report were noted to be offsite and located in the wider property;
- A total of 40 test pits were excavated for the investigation, of which one location was within the site (refer to Figure 2);
- All soil chemical analysis results for heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and phenols were below the site assessment criteria adopted for a low-density residential land use (land use type A);
- No asbestos was detected in any of the samples analysed; and
- Groundwater testing was not undertaken.

Overall, the report concluded that the results of the subsurface investigation and laboratory analysis indicated an absence of significant contamination within the soils encountered, with a majority of the reported concentrations of the CoPC below the laboratory practical quantitation limit (PQL) and all recorded concentrations of the CoPC being less than the adopted SAC. Therefore, the risk to human and environmental receptors based on the results were considered to be low for the area of investigation and the site. However, the report did indicate there to be risks to the area of investigation from off-site sources, in particular the adjacent unlined landfill, including migrating leachate contaminated groundwater and landfill gas (particularly methane).

JKE note that given the distance of the landfill to the site (over 1km cross-gradient to the west), these off-site sources are considered unlikely to represent a contamination risk to the site.

3.2 Site Identification

Table 3-1: Site Identification

Current Site Owner (certificate of title):	Elmslea Land Developments Pty Ltd (as per the title records at the time of preparing the report)
Site Address:	Birchfield Drive, Bungendore, NSW
Lot & Deposited Plan:	Part of Lot 125 in DP1297613 (as per the Section 10.7 planning certificate at the time of preparing the report)
Current Land Use:	Vacant land
Proposed Land Use:	Proposed high school (year 7 to 12)
Local Government Area:	Queanbeyan Palerang Regional Council
Current Zoning:	R2: Low Density Residential
Site Area (ha) (approx.):	4.2
RL (AHD in m) (approx.):	725-745
Geographical Location (decimal degrees) (approx.):	Latitude: - 35.2418533 Longitude: 149.458176
Site Plans:	Appendix A

3.3 Site Location and Regional Setting

The site is located in an area of Bungendore that is currently under development as a new residential estate and is bound by Birchfield Drive to the south, Bridget Avenue to the north, and Winyu Rise to the east. The site is located approximately 100m to the west of a tributary of Turallo Creek, which itself is located approximately 1.25km to the south of the site.

3.4 Topography

The site is located within regional topography generally comprising rolling, low relief hills generally sloping at less than 10°. The site is located on the southern flank of a hill which rises on the northern side of Bungendore township. Surface levels within the site generally slope down to the south-east, south and south-west at approximately 6° to 8° from a local rise located within the central portion of the northern boundary. Parts of the site appear to have been levelled off to account for the newly constructed roads to the immediate north, south and east.

3.5 Site Inspection

A walkover inspection of the site was undertaken by JKE on 2 October 2024. The inspection was limited to accessible areas of the site and immediate surrounds. Selected site photographs obtained during the inspection are attached in the appendices.

A summary of the inspection findings is outlined in the following subsections:

3.5.1 Current Site Use and/or Indicators of Former Site Use

At the time of the inspection, the majority of the site was grass covered and appeared to be formerly agricultural grazing land, with some evidence of earthworks along the boundaries of the site and on the higher central section (most likely associated with the recent construction of the adjacent roads/road verges).

3.5.2 Buildings, Structures and Roads

No buildings, structures or roads were observed on the site during the site inspection.

3.5.3 Boundary Conditions, Soil Stability and Erosion

The site itself was not fenced, however access to the site was via locked gates at the intersection of either Birchfield Drive and Harp Avenue, or Bridget and Harp Avenue. Some surface scouring from surface water movement was evident along the lower southern and eastern sides of the site.

3.5.4 Presence of Drums/Chemical Storage and Waste

No drums/chemical storage and/or waste was observed on the site during the inspection.

3.5.5 Evidence of Cut and Fill

The site appeared to be in keeping with the surrounding topography with minimal cut and fill works evident. Some ironstone and quartz gravels and sands were visible on the site surface, generally along the northern or southern boundaries of the site and appeared to be associated with construction of the adjacent roads and services infrastructure as part of the infrastructure works.

3.5.6 Visible or Olfactory Indicators of Contamination (odours, spills etc)

Apart from minor/localised filling, no visible or olfactory indicators of contamination were observed during the site inspection. There was no visible (e.g. presence of staining, fibre cement fragments etc) or olfactory (e.g. odours) evidence at the time of the inspection to suggest that the fill was potentially contaminated.

3.5.7 Drainage and Services

Surface water would be expected to infiltrate the site surface, with excess surface water expected to flow in keeping with the localised falls of the site, to the east and west from the highest point of the site in the central north and in an overall southern direction.

It is also noted that a French style drainage channel had been constructed to the immediate west of the site and on the southern side of Birchfield Drive, opposite the central-southern boundary of the site. These drains are assumed to feed into Turallo Creek located approximately 1.25km to the south of the site.

3.5.8 Sensitive Environments

Sensitive environments such as wetlands, ponds, creeks or extensive areas of natural vegetation were not identified on site or in the immediate surrounds.

3.5.9 Landscaped Areas and Visible Signs of Plant Stress

The majority of the site surface was generally grass and weed covered. All vegetation inspected appeared to be in good condition with no obvious evidence of phyto-toxic stress or die back.

3.6 Surrounding Land Use

During the site inspection, JKE observed the site to be surrounded by vacant undeveloped land that had been prepared for future development with infrastructure services (roads, gutters, underground utilities, etc), in all directions. Further to the south and south-west were newly developed residential properties.

JKE did not observe any land uses in the immediate surrounds that were identified as potential contamination sources for the site.

3.7 Underground Services

The 'Before You Dig Australia' (BYDA) plans were reviewed for the investigation in order to establish whether any major underground services exist at the site or in the immediate vicinity that could act as a preferential pathway for contamination migration. Major services were not identified that would be expected to act as preferential pathways for contamination migration.

3.8 Section 10.7 Planning Certificate

The section 10.7 (2 and 5) planning certificates were reviewed for the investigation. Copies of the certificates are attached in the appendices. A summary of the relevant information is outlined below:

- The land is not deemed to be: significantly contaminated; subject to a management order; subject of an approved voluntary management proposal; or subject to an on-going management order under the provisions of the CLM Act 1997;
- The land is not the subject of a Site Audit Statement (SAS);
- The land is not located within an acid sulfate soil (ASS) risk area; and
- An item of environmental heritage is not located on the land;

- The land is not located in a conservation area.
- The certificate also noted the following in regards to contamination:
  A Preliminary Site Investigation was undertaken by Douglas Partners in December 2016 and an addendum issued in September 2017 for Lot 1 DP 798111. Based on the findings of the investigation, the potential for significant contamination to be present within the site from on-site sources is considered to be low. However, risks from off-site sources, in particular the adjacent unlined landfill, include migrating leachate contaminated groundwater and landfill gas (particularly methane) and cannot be discounted. The investigation concluded that the site is suitable for the intended low density residential subject to the ongoing monitoring of the Bungendore Landfill Site to determine that a 250m no-build buffer is appropriate and the implementation of an unexpected finds protocol (UFP) to address potential contamination and bonded asbestos containing materials (ACM) encountered. It is also noted that during development and after the removal of the concrete slab from the former toilet, any hole used for septic waste, should be validated. Council has required the UFP as a condition of its approval for the subdivision of the land (DA.2020.1469). This condition is to address potential contamination for any bonded Asbestos Containing Material should it be uncovered on site during construction.

JKE was not provided a copy of the DP PSI report as referenced above, however, as noted in Section 3.1 we have reviewed a copy of the addendum. It is noted that the Bungendore Landfill Site is located over 1km to the west of the site and is not of concern as noted previously.

4 GEOLOGY AND HYDROGEOLOGY

4.1 Regional Geology

Regional geological information was reviewed for the investigation. The information was sourced from the Lotsearch report attached in the appendices. The report indicates that the site is underlain by Abercrombie Formation Sandstone, which typically consists of brown and buff to grey, thin- to thick-bedded, fine- to coarse grained mica-quartz (feldspar) sandstone, interbedded with laminated siltstone and mudstone.

4.2 Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW information was reviewed for the PSI as presented in the Lotsearch report. The report indicates that the site is located within the Bywong Soil Group soil landscape. The Bywong Soil Group is generally characterised by rolling to undulated low hills, rises and minor flats on metasediments. Soils are generally shallow, and well to rapidly drained on crests and upper slopes with new rock outcrops. Moderately deep and moderately well-drained soils on mid-slopes; and deep imperfectly drained and poorly drained soils on lower slopes. This soil group is limited by its infertile, erodible and shallow soils, with water erosion and salinity hazards.

4.3 Dryland Salinity – National Assessment

There was no dryland salinity national assessment data for the site.

4.4 Acid Sulfate Soil (ASS) Risk and Planning

The site is not located in an ASS risk area according to the risk maps prepared by the Department of Land and Water Conservation.

ASS information presented in the Lotsearch report indicated that the site is not located within an ASS risk area.

4.5 Hydrogeology

Hydrogeological information presented in the Lotsearch report indicated that the regional aquifer on-site and in the areas immediately surrounding the site includes porous, extensive highly productive aquifers and fractured or fissured, extensive aquifers of low to moderate productivity. There was a total of 46 registered bores within the report buffer of 2,000m. In summary:

- The nearest registered bore was located approximately 950m cross-gradient to the west of the site. This was utilised for water supply purposes;
- The majority of the bores were registered for water supply purposes; and
- The drillers log information from the closest registered bores typically identified fill and/or clay soil to depths of 3.0-18.0m, underlain by shale, sandstone and granite bedrock. Standing water levels (SWLs) in the bores ranged from 3.0mBGL to 19.0mBGL.

The information reviewed for the PSI indicates that the subsurface conditions at the site are likely to consist of relatively low permeability (residual) soils overlying bedrock. Abstraction and use of groundwater at the

site or in the immediate surrounds may be viable under these conditions, however the use of groundwater is not proposed as part of the development and there were no registered groundwater bores in close proximity. We assume there is a reticulated water supply in the area and consumption of groundwater is not expected to occur, although it cannot be ruled out given that some registered groundwater bores in the region are listed as water supply bores.

Considering the local topography and surrounding land features, JKE anticipate groundwater to flow towards the south.

4.6 Receiving Water Bodies

The closest surface water body is a tributary of Turallo Creek located approximately 100m to the east of the site. The tributary appeared to be ephemeral, and as it is cross to down-gradient from the site the tributary is considered to be a potential receptor.

5 SITE HISTORY INFORMATION

5.1 Review of Historical Aerial Photographs

Historical aerial photographs were reviewed for the investigation. The information was sourced from the Lotsearch report. JKE has reviewed the photographs and summarised relevant information in the following table:

Table 5-1: Summary of Historical Aerial Photographs

Year	Details
1944	The site and surrounds appeared to be vacant and grass covered (possibly used for grazing purposes).
1959 1968 1976 1985 1992 2002 2013	The site and surrounding features appeared generally similar to the previous photograph.
2023	**On-site:** The site appeared to have undergone some disturbance to the surface soils with much of the vegetation no longer present generally around the boundaries of the site. The surface scouring (likely from vehicle movement) appeared to be associated with the immediately adjacent infrastructure including roads and drainage line (consistent with existing site layout which resulted from the subdivision works). **Off-site:** The surrounds appeared similar to the site with new road and drainage line infrastructure visible, and surface scouring on new plots between similar to that visible on site (consistent with existing layout of surrounding area associated with the subdivision works).

5.2 Review of Historical Land Title Records

Historical land title records were reviewed for the investigation. The record search was undertaken by InfoTrack. Copies of the title records are attached in the appendices. The title records indicate the following:

- The site (and wider lot) was owned by individual for long periods including a grazier between 1913 and 1968 and a livestock broker between 1988 and 2004; and
- Several companies have owned the site, including the
- The current site owner, Elmslea Land Developments Pty Ltd, has owned the site since 2004.

The historical aerial photographs available from the corresponding time to ownership by the grazier (refer to Section 4.1), suggest agricultural land uses such as grazing likely occurred on the site and wider property. Agricultural activities are considered to be a potentially contaminating activity under Table 1 of the Managing Land Contamination Planning Guidelines SEPP55 Remediation of Land (1998)[5]. The SEPP55 Planning Guidelines still underpin Chapter 4 of State Environmental Planning Policy (Resilience and Hazards) 2021[6] (formerly known as SEPP55).

[5] DUAP/EPA, (1998). *Managing Land Contamination Planning Guidelines, SEPP55 Remediation of Land* (referred to as SEPP55 Planning Guidelines)

[6] *State Environmental Planning Policy (Resilience and Hazards) 2021* (NSW) (referred to as SEPP Resilience and Hazards 2021)

5.3 NSW EPA and Department of Defence Records

A review of the NSW EPA and Department of Defence databases was undertaken for the PSI. Information from the following databases were sourced from the Lotsearch report:

- Records maintained in relation to contaminated land under Section 58 of the CLM Act 1997;
- Records of sites notified in accordance with the Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997 (2015)[7];
- Licensed activities under the Protection of the Environment Operations Act (1997)[8];
- Sites being investigated under the NSW EPA per-and polyfluoroalkyl substances (PFAS) investigation program;
- Sites being investigated by the Department of Defence for PFAS contamination; and
- Sites being managed by the Department of Defence for PFAS contamination.

The search included the site and surrounding areas in the report buffer. A summary of the information is provided below:

Table 5-2: NSW EPA and Department of Defence Records

Records	On-site	Off-site
Records under Section 58 of the CLM Act 1997	None	None
Records under the Duty to Report Contamination under Section 60 of the CLM Act 1997	None	None
Penalty Notices, Clean up Notices and Prevention Notices under Section 91, 92 and 96 respectively, of the POEO Act 1997	None	None
Licences under the POEO Act 1997	A historical license was identified for the application of herbicides along waterways crossing through the north-west most corner of the site. This is not considered to be of concern from a contamination perspective given this type of activity is routine and is regulated.	Current and historical licenses were identified for several properties within the report buffer, including railway systems activities the application of herbicides along waterways. However, these activities are considered unlikely to pose a contamination risk to the site or represent and off-site source of contamination.
Records relating to the NSW EPA PFAS Investigation Program	None	None

[7] NSW EPA, (2015). *Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997.* (referred to as Duty to Report Contamination)

[8] Protection of the Environment Operations Act 1997 (NSW) (referred to as POEO Act 1997)

Records	On-site	Off-site
Records relating to the Department of Defence PFAS management and investigation programs	None	None

5.4 Historical Business Directory and Additional Lotsearch Information

Historical business records and other relevant information were reviewed for the investigation. The information was sourced from the Lotsearch report and summarised in the following table:

Table 5-3: Historical Business Directory and other Records

Records	On-site	Off-site
Historical dry cleaners, motor garages and service stations	None	None
Other historical businesses that could represent potential sources of contamination	None	None
National waste management site database	None	None
National liquid fuel facilities	None	None
Mapped heritage items	None	None
Mapped ecological constraints	None	Grasslands were mapped in the report buffer. These are not considered to have any relevance in the context of the PSI objectives.
Mapped naturally occurring asbestos	None	None

5.5 Summary of Site History Information

A time line summary of the historical land uses and activities is presented in the following table. The information presented in the table is based on a weight of evidence assessment of the site history documentation and observations made by JKE.

Table 5-4: Summary of Historical Land Uses / Activities

Year(s)	On-site - Potential Land Use / Activities	Off-site - Potential Land Use / Activities
Pre-1913-2013	• Agricultural (grazing) and vacant undeveloped land uses.	• Agricultural (grazing) and vacant undeveloped land uses.
2013-2023	• Vacant undeveloped/agricultural (grazing) land; and • Evidence of some surface scouring / minimal filling associated with construction of the adjacent roads and services infrastructure as part of the wider subdivision works.	• Vacant undeveloped/agricultural land; • Residential land uses; and • Infrastructure construction including roads and services.

5.6 Integrity of Site History Information

The majority of the site history information was obtained from government organisations as outlined in the relevant sections of this report. The veracity of the information from these sources is considered to be relatively high. A certain degree of information loss can be expected given the lack of specific land use details over time. JKE has relied upon the Lotsearch report and have not independently verified any information contained within. However, it is noted that the Lotsearch report is generated based on databases maintained by various government agencies and is expected to be reliable.

6 CONCEPTUAL SITE MODEL

NEPM (2013) defines a CSM as a representation of site related information regarding contamination sources, receptors and exposure pathways between those sources and receptors. The CSM for the site is presented in the following sub-sections and is based on the site information (including the site inspection information) and the review of site history information. Reference should also be made to the figures attached in the appendices.

A review of the CSM in relation to source, pathway and receptor (SPR) linkages has been undertaken as part of the Tier 1 risk assessment process, as outlined in Section 11.

6.1 Potential Contamination Sources/AEC and CoPC

The potential contamination sources/AEC and CoPC are presented in the following table:

Table 6-1: Potential (and/or known) Contamination Sources/AEC and Contaminants of Potential Concern

Source / AEC	CoPC
Fill material – Some shallow surface filling may have been undertaken during earthworks associated with construction of the surrounding roads and services infrastructure as part of the subdivision works. The fill may have been imported from various sources and could be contaminated. However, most likely the fill has resulted from materials excavated in the surrounds, or engineered materials used for backfilling service trenches etc.	Heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), petroleum hydrocarbons (referred to as total recoverable hydrocarbons – TRHs), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), polychlorinated biphenyls (PCBs) and asbestos.
Historical agricultural use – The site appears to have been used for low-intensity grazing purposes. This could have resulted in contamination across the site via use of machinery and potential (although unlikely) use of pesticides. However, potential contamination-related impacts from grazing uses at this site are considered unlikely given that there were no associated machinery sheds/workshops at the site or even in the vicinity. There was no evidence of on-site irrigation pipework (e.g. pipework potentially containing asbestos) during the inspection, however, the presence of such pipework cannot be ruled out	Heavy metals, TRH, PAHs, OCPs, PCBs and asbestos. JKE note that OCPs only became commercially available in the 1940s. Prior to this time pesticides were predominantly heavy metal compounds.

6.2 Mechanism for Contamination, Affected Media, Receptors and Exposure Pathways

The mechanisms for contamination, affected media, receptors and exposure pathways relevant to the potential contamination sources/AEC are outlined in the following CSM table:

Table 6-2: CSM

Potential mechanism for contamination	The potential mechanisms for contamination are most likely to include 'top-down' impacts and spills. There is a potential for sub-surface releases to have occurred if deep fill (or other buried industrial infrastructure) is present, although this is considered to be the least likely mechanism for contamination.
Affected media	Soil has been identified as the potentially affected medium. The potential for groundwater impacts is considered to be relatively low. However, groundwater would need to be considered in the event significant contamination was identified in soil.
Receptor identification	Human receptors include site occupants/users (including adults and children), construction workers and intrusive maintenance workers. Off-site human receptors include adjacent land users, groundwater users and recreational water users in the creeks and river. Ecological receptors include terrestrial organisms and plants within unpaved areas (including any proposed landscaped areas), freshwater ecology in the down-gradient water bodies.
Potential exposure pathways	Dermal absorption, ingestion and inhalation of dust (all contaminants) and vapours (volatile TRH, naphthalene and BTEX). The potential for exposure would typically be associated with the construction and excavation works, and future use of the site. Potential exposure pathways for ecological receptors include primary/direct contact and ingestion. Exposure during future site use could occur via direct contact with soil in unpaved areas such as gardens, inhalation of airborne asbestos fibres during soil disturbance, or inhalation of vapours within enclosed spaces such as buildings. Potential exposure pathways to groundwater (for human receptors) would be via vapour intrusion, or potential primary/secondary contact with groundwater during construction or if groundwater migrates into the river which could be utilised for recreational purposes. Exposure to ecological receptors could also occur in this water body. Sporadic use of groundwater for drinking purposes may also occur in the region (as suggested by the registered water supply bores in the vicinity), although it is assumed there is a town water supply and there are no water supply bores registered in the immediate vicinity.
Potential exposure mechanisms	The following have been identified as potential exposure mechanisms for site contamination: • Vapour intrusion into proposed buildings (either from soil contamination or volatilisation of contaminants from groundwater); • Contact (dermal, ingestion or inhalation) with exposed soils in landscaped areas and/or unpaved areas; • Contact with groundwater/surface water during construction activities;

	• Migration of groundwater/dam water into nearby water bodies, including aquatic ecosystems and recreational water bodies; and • Potential consumption of groundwater, or primary/secondary contact during activities such as irrigation.
Presence of preferential pathways for contaminant movement	None identified.

7 SAMPLING, ANALYSIS AND QUALITY PLAN

7.1 Data Quality Objectives (DQO)

Data Quality Objectives (DQOs) were developed to define the type and quality of data required to achieve the project objectives outlined in Section 2.1. The DQOs were prepared with reference to the process outlined in Schedule B2 of NEPM (2013). The seven-step DQO approach for this project is outlined in the following sub-sections.

The DQO process is validated in part by the Data Quality Assurance/Quality Control (QA/QC) Evaluation. The Data (QA/QC) Evaluation is summarised in Section 9.1 and the detailed evaluation is provided in the appendices.

7.1.1 Step 1 - State the Problem

The CSM identified potential sources of contamination/AEC at the site that may pose a risk to human health and the environment. Investigation data is required to assess the contamination status of the site, assess the risks posed by the contaminants in the context of the proposed activity/intended land use, and assess whether remediation is required. This information will be considered by the consent authority in exercising its planning functions in relation to the REF proposal.

7.1.2 Step 2 - Identify the Decisions of the Study

The objectives of the investigation are outlined in Section 2.1. The decisions to be made reflect these objectives and are as follows:

- Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?
- Are any results above the SAC?
- Do potential risks associated with contamination exist, and if so, what are they?
- Is further investigation/remediation required?
- Is the site suitable for the proposed activity, or can the site be made suitable subject to further characterisation and/or remediation?

7.1.3 Step 3 - Identify Information Inputs

The primary information inputs required to address the decisions outlined in Step 2 include the following:

- Existing relevant environmental data from previous reports;
- Site information, including site observations and site history documentation;
- Sampling of potentially affected media, (soil only);
- Observations of sub-surface variables such as soil type, photo-ionisation detector (PID) concentrations, odours and staining;
- Laboratory analysis of soils for the CoPC identified in the CSM; and
- Field and laboratory QA/QC data.

7.1.4 Step 4 - Define the Study Boundary

The sampling will be confined to the site boundaries as shown in Figure 2 and was limited vertically to a depth of 7.75mBGL (spatial boundary). The sampling was completed between 14 and 18 October 2024 (temporal boundary).

7.1.5 Step 5 - Develop an Analytical Approach (or Decision Rule)

7.1.5.1 Tier 1 Screening Criteria

The laboratory data will be assessed against relevant Tier 1 screening criteria (referred to as SAC), as outlined in Section 8. Exceedances of the SAC do not necessarily indicate a requirement for remediation or a risk to human health and/or the environment. Exceedances are considered in the context of the CSM and valid SPR-linkages.

For this investigation, the individual results have been assessed as either above or below the SAC. Statistical evaluation of the dataset via calculation of mean values and/or 95% upper confidence limit (UCL) values has not been undertaken due to the spatial distribution of the data and the number of samples submitted for analysis.

7.1.5.2 Field and Laboratory QA/QC

Field QA/QC included analysis of inter-laboratory duplicates, intra-laboratory duplicates, trip spike, trip blank and rinsate samples. Further details regarding the sampling and analysis undertaken, and the acceptable limits adopted, is provided in the Data Quality (QA/QC) Evaluation in the appendices.

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the attached laboratory reports. These criteria were developed and implemented in accordance with the laboratory's National Association of Testing Authorities, Australia (NATA) accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

In the event that acceptable limits are not met by the laboratory analysis, other lines of evidence are reviewed (e.g. field observations of samples, preservation, handling etc) and, where required, consultation with the laboratory is undertaken in an effort to establish the cause of the non-conformance. Where uncertainty exists, JKE typically adopt the most conservative concentration reported (or in some cases, consider the data from the affected sample as an estimate).

7.1.5.3 Appropriateness of Practical Quantitation Limits (PQLs)

The PQLs of the analytical methods are considered in relation to the SAC to confirm that the PQLs are less than the SAC. In cases where the PQLs are greater than the SAC, a discussion of this is provided.

7.1.6 Step 6 – Specify Limits on Decision Errors

To limit the potential for decision errors, a range of quality assurance processes are adopted. A quantitative assessment of the potential for false positives and false negatives in the analytical results is undertaken with reference to Schedule B(3) of NEPM (2013) using the data quality assurance information collected.

Decision errors can be controlled through the use of hypothesis testing. The test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false. The null hypothesis is an assumption that is assumed to be true in the absence of contrary evidence. For this investigation, the null hypothesis has been adopted which is that, there is considered to be a complete SPR linkage for the CoPC identified in the CSM unless this linkage can be proven not to (or unlikely to) exist. The null hypothesis has been adopted for this investigation.

Quantitative limits on decision errors were not established as the sample plan was not probabilistic.

Data Quality Indicators (DQI) for field and laboratory QA/QC samples are defined in the QA/QC Data Evaluation in the appendices. An assessment of the DQI's was made in relation to precision, accuracy, representativeness, completeness and comparability.

7.1.7 Step 7 - Optimise the Design for Obtaining Data

The most resource-effective design will be used in an optimum manner to achieve the investigation objectives. Adjustment of the investigation design can occur following consultation or feedback from project stakeholders. For this investigation, the design was optimised via consideration of the various lines of evidence used to select the sample locations, the media being sampled, and also by the way in which the data were collected.

The sampling plan and methodology are outlined in the following sub-sections.

7.2 Soil Sampling Plan and Methodology

The soil sampling plan and methodology adopted for this investigation is outlined in the table below:

Table 7-1: Soil Sampling Plan and Methodology

Aspect	Input
Sampling Density	Samples were collected from 35 locations as shown on the attached Figure 2. Based on the site area (4.2ha), this number of locations corresponded to a sampling density of approximately one sample per 1,200m^2. The sampling plan was not designed to meet the minimum sampling density for hotspot identification, as outlined in the NSW EPA Sampling Design Part 1 – Application (2022)[9] contaminated land guidelines.
Sampling Plan	The sampling locations were placed on a judgemental sampling plan and were broadly positioned for site coverage, taking into consideration areas that were not easily accessible. This sampling plan was considered suitable to make a preliminary assessment of potential risks associated with the AEC and CoPC identified in the CSM, and assess whether further investigation is warranted.
Set-out and Sampling Equipment	Sampling locations were set out using a hand-held GPS unit (with an accuracy of ±0.01m). In-situ sampling locations were checked for underground services by an external contractor prior to sampling.

[9] NSW EPA, (2022). *Sampling design part 1 - application.* (referred to as EPA Sampling Design Guidelines 2022)

Aspect	Input
	Samples were collected using a drill rig equipped with spiral flight augers. Soil samples were obtained from a Standard Penetration Test (SPT) split-spoon sampler, or directly from the auger when conditions did not allow use of the SPT sampler.
Sample Collection and Field QA/QC	Soil samples were obtained between 14 and 18 October 2024 in accordance with standard field procedures. Soil samples were collected from the fill and natural profiles based on field observations. The sample depths are shown on the logs attached in the appendices. Samples were placed in glass jars with plastic caps and teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags. During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis. The field splitting procedure included splitting the soil by hand and alternately filling the sampling containers to obtain a representative split sample.
Field Screening	A portable Photoionisation Detector (PID) fitted with a 10.6mV lamp was used to screen the samples for the presence of volatile organic compounds (VOCs). PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases. PID calibration records are maintained on file by JKE. The field screening for asbestos quantification included the following: • A representative bulk sample was collected from fill at 1m intervals, or from each distinct fill profile. The quantity of material for each sample varied based on whatever return could be achieved using the auger. The bulk sample intervals are shown on the attached borehole pit logs; • Each sample was weighed using an electronic scale; • Each bulk sample was passed through a sieve with a 7.1mm aperture and inspected for the presence of fibre cement; • The condition of fibre cement or any other suspected asbestos materials was noted on the field records; and • If observed, any fragments of fibre cement in the bulk sample were collected, placed in a zip-lock bag and assigned a unique identifier. Calculations for asbestos content were undertaken based on the requirements outlined in Schedule B1 of NEPM (2013), as summarised in Section 8.1.
Decontami-nation and Sample Preservation	Sampling personnel used disposable nitrile gloves during sampling activities. Re-usable sampling equipment was decontaminated using Decon and potable water. Soil samples were preserved by immediate storage in an insulated sample container with ice. On completion of the fieldwork, the samples were stored temporarily in fridges in the JKE warehouse before being delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody (COC) procedures.

7.2.1 Laboratory Analysis

Samples were analysed by an appropriate, NATA Accredited laboratory using the analytical methods detailed in Schedule B(3) of NEPM 2013. Reference should be made to the laboratory reports attached in the appendices for further details.

Table 7-2: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicates, trip blanks, trip spikes and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	364339, and 364339-A
Inter-laboratory duplicates	Envirolab Services Pty Ltd VIC, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	MFJ0468

It is noted that report 364339 includes additional soil data relevant to the salinity assessment. These items have not been discussed in this PSI report and are to be reported under a separate cover.

8 SITE ASSESSMENT CRITERIA (SAC)

The SAC were derived from the NEPM 2013 and other guidelines as discussed in the following sub-sections. The guideline values for individual contaminants are presented in the attached report tables and further explanation of the various criteria adopted is provided in the appendices.

8.1 Soil

Soil data were compared to relevant Tier 1 screening criteria in accordance with NEPM (2013) as outlined below.

8.1.1 Human Health

- Health Investigation Levels (HILs) for 'public open spaces; secondary schools; and footpaths' exposure scenario (HIL-C);
- Health Screening Levels (HSLs) for a 'low-high density residential' exposure scenario (HSL-A & HSL-B), were adopted as land use type C does not allow for buildings and structures. HSLs were calculated based on conservative assumptions including a 'sand' type and a depth interval of 0m to 1m;
- HSLs for direct contact presented in the CRC Care Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document (2011)[10]; and
- Asbestos was assessed against the HSL-C criteria. A summary of the asbestos criteria is provided in the table below:

Table 8-1: Details for Asbestos SAC

Guideline	Applicability
Asbestos in Soil	The HSL-C criteria will be adopted for the assessment of asbestos in soil. The SAC adopted for asbestos are derived from the NEPM 2013 and based on the Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2021)[11]. The SAC include the following: • <0.02% w/w bonded asbestos containing material (ACM) in soil; and • <0.001% w/w asbestos fines/fibrous asbestos (AF/FA) in soil. Concentrations for bonded ACM concentrations in soil are based on the following equation which is presented in Schedule B1 of NEPM (2013): **% w/w asbestos in soil =** **% asbestos content x bonded ACM (kg)** / Soil volume (L) x soil density (kg/L) However, we are of the opinion that the actual soil volume in a 10L bucket varies considerably due to the presence of voids, particularly when assessing cohesive soils. Therefore, each bucket sample was weighed using electronic scales and the above equation was adjusted as follows (we note that the units have also converted to grams): **% w/w asbestos in soil =** **% asbestos content x bonded ACM (g)** / Soil weight (g)

[10] Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care), (2011). Technical Report No. 10 - *Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document*

[11] Western Australian (WA) Department of Health (DoH), (2021). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*. (referred to as WA DoH 2021)

8.1.2 Environment (Ecological – terrestrial ecosystems)

- Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) for an 'urban residential and public open space' (URPOS) exposure scenario. These have only been applied to the top 2m of soil as outlined in NEPM (2013). The criterion for benzo(a)pyrene has been increased from the value presented in NEPM (2013) based on the Canadian Soil Quality Guidelines[12];
- ESLs were adopted based on the soil type; and
- EILs for selected metals were calculated based on the most conservative added contaminant limit (ACL) values presented in Schedule B(1) of NEPM (2013) and published ambient background concentration (ABC) values presented in the document titled Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (1995)[13]. This method is considered to be adequate for the Tier 1 screening.

8.1.3 Management Limits for Petroleum Hydrocarbons

Management limits for petroleum hydrocarbons (as presented in Schedule B1 of NEPM 2013) were considered.

8.1.4 Waste Classification

Data for the waste classification assessment were assessed in accordance with the Waste Classification Guidelines, Part 1: Classifying Waste (2014)[14] as outlined in the following table:

Table 8-2: Waste Categories

Category	Description
General Solid Waste (non-putrescible)	• If Specific Contaminant Concentration (SCC) ≤ Contaminant Threshold (CT1) then Toxicity Characteristics Leaching Procedure (TCLP) not needed to classify the soil as general solid waste; and • If TCLP ≤ TCLP1 and SCC ≤ SCC1 then treat as general solid waste.
Restricted Solid Waste (non-putrescible)	• If SCC ≤ CT2 then TCLP not needed to classify the soil as restricted solid waste; and • If TCLP ≤ TCLP2 and SCC ≤ SCC2 then treat as restricted solid waste.
Hazardous Waste	• If SCC > CT2 then TCLP must be undertaken to classify the soil as hazardous waste; and • If TCLP > TCLP2 and/or SCC > SCC2 then treat as hazardous waste.
Virgin Excavated Natural Material (VENM)	Natural material (such as clay, gravel, sand, soil or rock fines) that meet the following: • That has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial mining or agricultural activities; • That does not contain sulfidic ores or other waste; and • Includes excavated natural material that meets such criteria for virgin excavated natural material as may be approved from time to time by a notice published in the NSW Government Gazette.

[12] Canadian Council of Ministers of the Environment, (1999). *Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)* (referred to as the Canadian Soil Quality Guidelines)

[13] Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4*. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

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

9 RESULTS

9.1 Summary of Data (QA/QC) Evaluation

The data evaluation is presented in the appendices. In summary, JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

9.2 Subsurface Conditions

A summary of the subsurface conditions encountered during the investigation is presented in the following table. Reference should be made to the borehole logs attached in the appendices for further details.

Table 9-1: Summary of Subsurface Conditions

Profile	Description
Fill	Fill was encountered at the surface in BH4, BH10, BH16 and BH34 and extended to depths of approximately 0.2m to 1.4mBGL. Fill depths are shown on Figure 2 in Appendix A. The fill typically comprised silty clay with inclusions of ironstone and quartz gravels, sand, ash and root fibres. No odours or staining were recorded in the fill material during field work. FCF/ACM was not encountered in the fill material during fieldwork.
Natural Soil	Natural residual silty clay soils were encountered beneath the at the surface or beneath the fill material in all boreholes and extended to depths of approximately 0.7m to 3.7mBGL. Neither odours nor staining were recorded in the natural soil during fieldwork.
Bedrock	With the exception of BH2, sandstone, siltstone or mudstone bedrock was encountered beneath the natural soils in all boreholes and extended to the maximum termination depth of the environmental investigation at 7.75mBGL. Neither odours nor staining were recorded in the bedrock during fieldwork.
Groundwater	Groundwater seepage was not encountered in the boreholes during drilling. All boreholes remained dry on completion of drilling and a short time after.

9.3 Field Screening

A summary of the field screening results is presented in the following table:

Table 9-2: Summary of Field Screening

Aspect	Details
PID Screening of Soil Samples for VOCs	Due to a calibration issue with the PID, headspace readings were not able to be obtained for the soil samples. Notwithstanding, we note that no odours or staining were observed and the potential for hydrocarbon impacts were considered to be low based on these field indicators.
Bulk Screening for Asbestos	The bulk field screening results are summarised in the attached report Table S5. All results were below the SAC.

9.4 Soil Laboratory Results

The soil laboratory results were assessed against the SAC presented in Section 8.1. Individual SAC are shown in the report tables attached in the appendices. A summary of the results is presented below:

9.4.1 Human Health and Environmental (Ecological) Assessment

Table 9-3: Summary of Soil Laboratory Results – Human Health and Environmental (Ecological)

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
Arsenic	44	9	0	0	-
Cadmium	44	<0.4	0	NSL	-
Chromium (total)	44	55	0	0	-
Copper	44	30	0	0	-
Lead	44	25	0	0	-
Mercury	44	0.1	0	NSL	-
Nickel	44	25	0	0	-
Zinc	44	29	0	0	-
Total PAHs	44	<0.05	0	NSL	-
Benzo(a)pyrene	44	<0.05	NSL	0	-
Carcinogenic PAHs (as BaP TEQ)	44	<0.5	0	NSL	-
Naphthalene	44	<1	0	NSL	-
DDT+DDE+DDD	36	<0.1	0	NSL	-
DDT	36	<0.1	NSL	0	-
Aldrin and dieldrin	36	<0.1	0	NSL	-
Chlordane	36	<0.1	0	NSL	-
Heptachlor	36	<0.1	0	NSL	-
Chlorpyrifos (OPP)	36	<0.1	0	NSL	-
PCBs	36	<0.1	0	NSL	-

Analyte	N	Max. (mg/kg)	N> Human Health SAC	N> Ecological SAC	Comments
TRH F1	44	<25	0	0	-
TRH F2	44	<50	0	0	-
TRH F3	44	<100	0	0	-
TRH F4	44	<100	0	0	-
Benzene	44	<0.2	0	0	-
Toluene	44	<0.5	0	0	-
Ethylbenzene	44	<1	0	0	-
Xylenes	44	<1	0	0	-
Asbestos (in soil) (%w/w)	35	<0.01%w/w ACM <0.001%w/w AF/FA	0	NA	Asbestos was not detected in any of the soil samples analysed.

Notes:

N: Total number (primary samples)

NSL: No set limit

NL: Not limiting

9.4.2 Waste Classification Assessment

The laboratory results were assessed against the criteria presented in Section 8.1.4. The results are presented in the report tables attached in the appendices. A summary of the results is presented in the following table:

Table 9-4: Summary of Soil Laboratory Results Compared to CT and SCC Criteria

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
Arsenic	44	0	0	-
Cadmium	44	0	0	-
Chromium	44	0	0	-
Copper	44	NSL	NSL	-
Lead	44	0	0	-
Mercury	44	0	0	-
Nickel	44	0	0	-
Zinc	44	NSL	NSL	-
TRH (C_6-C_9)	44	0	0	-

Analyte	N	N > CT Criteria	N > SCC Criteria	Comments
TRH (C_{10}-C_{36})	44	0	0	-
BTEX	44	0	0	-
Total PAHs	44	0	0	-
Benzo(a)pyrene	44	0	0	-
OCPs & OPPs	36	0	0	-
PCBs	36	0	0	-
Asbestos	35	-	-	Asbestos was not detected in any of the soil samples analysed.

N: Total number (primary samples)

NSL: No set limit

10 WASTE CLASSIFICATION ASSESSMENT

10.1 Preliminary Waste Classification of Fill

Based on the results of the waste classification assessment, and at the time of reporting, the fill material at the site is given a preliminary classification of **General Solid Waste (non-putrescible)**. Additional testing should be undertaken during development works to confirm the waste classification, prior to any off-site disposal of waste.

Waste fill should be disposed of to a facility that is appropriately licensed by the NSW EPA to receive the waste stream. The facility should be contacted to obtain the required approvals prior to commencement of excavation.

10.2 Classification of Natural Soil and Bedrock

Based on the scope of work undertaken for this assessment, and at the time of reporting, JKE is of the opinion that the natural soil and bedrock at the site meets the definition of **VENM** for off-site disposal or re-use purposes. VENM is considered suitable for re-use on-site (from a contamination viewpoint), or alternatively, the information included in this report may be used to assess whether the material is suitable for beneficial reuse at another site as fill material.

11 DISCUSSION

11.1 Contamination Sources/AEC and Potential for Site Contamination

Based on the scope of work undertaken for this investigation, JKE identified the following potential contamination sources/AEC:

- Fill material; and
- Historical agricultural (grazing) land use.

Considering the above, and based on a qualitative assessment of various lines of evidence as discussed throughout this report, JKE is of the opinion that there is a relatively low potential for site contamination. The preliminary soil data collected for the investigation is discussed further in the following subsection, as part of the Tier 1 risk assessment.

11.2 Tier 1 Risk Assessment and Review of CSM

For a contaminant to represent a risk to a receptor, the following three conditions must be present:

1. Source – The presence of a contaminant;
2. Pathway – A mechanism or action by which a receptor can become exposed to the contaminant; and
3. Receptor – The human or ecological entity which may be adversely impacted following exposure to contamination.

If one of the above components is missing, the potential for adverse risks is relatively low.

11.2.1 Soil

Review of the site history information did not identify any former buildings or structures on the site. No indicators for asbestos (i.e. building and demolition waste, fibre cement, etc) were encountered in the fill material during fieldwork. Asbestos was not detected in the soil samples analysed. Considering these lines of evidence, the potential for asbestos to be present in fill material at the site, at concentrations that pose a risk to the receptors, is considered to be low.

However, we note that sampling was completed from boreholes using auger drilling methods (due to site accessibility limitations) which limits the disturbance of the soil and a thorough visual assessment of the fill/soil. Therefore, due to the presence of fill at the site, there remains a low potential for asbestos to be encountered during the proposed activity works (i.e. during ground disturbance). Residual risks associated with asbestos in fill can be addressed via the implementation of an unexpected finds protocol and, if required, appropriate management during the development works.

Elevated concentrations of the CoPC were not encountered above the adopted SAC in the soil samples analysed and therefore are not consider to pose a risk to the receptors. Significant and widespread impacts from the CoPC in soil are unlikely to be encountered.

Based on the site history, a lack of potential groundwater contamination sources in the area, and the soil results reported, the potential for the CoPC to impact the groundwater is considered to be low.

11.3 Decision Statements

The decision statements are addressed below:

Did the site inspection, or does the historical information identify potential contamination sources/AEC at the site?

Yes, refer to Section 11.1.

Are any results above the SAC?

No.

Do potential risks associated with contamination exist, and if so, what are they?

Actual risks were not identified and potential for contamination risks associated with historical land uses is considered to be low in light of the PSI findings. Recommendations have been included to mitigate risks from unexpected finds.

Is further investigation/remediation required?

The PSI did not identify a trigger for remediation and the PSI has confirmed that there is a low potential for contamination due to historical activities. Further detailed investigation is not considered to be required provided potential risks are managed via the development and implementation of a robust unexpected finds protocol.

Is the site suitable for the proposed activity, or can the site be made suitable subject to further characterisation and/or remediation?

JKE is of the opinion that the site is suitable for the proposed activity as described in Section 1.2. Based on the results of the PSI and will remain suitable subject to the development and implementation of a robust unexpected finds protocol.

11.4 Review of CSM and Data Gaps

An assessment of data gaps is provided in the following table:

Table 11-1: Review of CSM and Data Gap Assessment

AEC / Data Gap	Assessment
Fill material	Fill ranging in depth between approximately 0.2mBGL and 1.4mBGL was encountered across the site, however, large areas of the site had not been filled. The fill contained anthropogenic inclusions such as ironstone and quartz gravels, sand, ash and root fibres, and appeared most likely to soils associated with the wider subdivision area (i.e. posing a low contamination risk). Based on the site history, field work observations and soil results reported to date at the time of reporting, risks associated with this AEC are considered to be low and do not

AEC / Data Gap	Assessment
	require further assessment. However, an unexpected finds protocol (UFP) should be prepared and implemented during development. A recommendation has been included.
Historical Agricultural Land use	Based on the reported results to date, and at the time of reporting, risks associated with this AEC are considered to be low and do not require further assessment.
Soil sampling density below minimum guideline density	Sampling was limited to approximately 60% of the minimum sampling density recommended in the NSW EPA Sampling Design Part 1 – Application (2022)[15] for hotspot identification. It is also noted that sampling occurred from boreholes which poses limitations for identifying asbestos in fill. In light of the PSI findings which confirmed that there was no contamination in soil and a low risk of contamination associated with the identified AEC, in our opinion this data gap can be addressed via preparation and implementation of an unexpected finds protocol. A recommendation has been included.

[15] NSW EPA, (2022). *Sampling design part 1 - application.* (referred to as EPA Sampling Design Guidelines 2022)

12 CONCLUSIONS AND RECOMMENDATIONS

The PSI included a review of site history information, a site inspection and soil sampling from 35 boreholes. The following potential contamination sources were identified: fill material and historic agricultural (grazing) land use.

The boreholes generally encountered natural soils from the surface of the site underlain by sandstone, siltstone, and mudstone bedrock. Fill material was encountered in four locations only and extended to depths of approximately 0.2mBGL to 1.4mBGL. The fill contained inclusions of ironstone and quartz gravels, ash and root fibres. A selection of soil samples was analysed for the CoPC identified in the CSM. Elevated concentrations of the CoPC were not encountered above the adopted SAC.

Based on the Tier 1 risk assessment, JKE are of the opinion that potential risks associated with the CoPC at the site are low and the data collected during the investigation suggests that significant and widespread contamination issues are unlikely to be encountered.

Further investigation and/or remediation is not considered to be required and the site is considered to be suitable for the proposed activity outlined in Section 1.2, from a contamination viewpoint. To compensate for the low sampling density completed for the PSI, we recommend that a robust unexpected finds protocol be prepared by a suitably qualified environmental consultant and that this protocol be implemented during the development/construction phase of the project.

Preliminary waste classifications are discussed in Section 10. In JKE's opinion, all fill will classify as 'General Solid Waste (non-putrescible)'. Confirmatory waste classification assessment is required.

JKE consider that the report objectives outlined in Section 2.1 have been addressed.

12.1 Mitigation Measures – REF Requirement

JKE was requested by the client to include a table to support the contamination-related risk mitigation measures to be included in the REF. Mitigation measures to avoid, minimise, rectify and/or reduce or eliminate over time the adverse environmental impacts identified in the PSI are outlined in the table below:

Table 12-1: Mitigation Measures Relating to PSI Findings

Mitigation Number / Name	Aspect / Section	Mitigation Measure	Reason for Mitigation Measure
Unexpected Finds Protocol	During development / construction	Preparation of an Unexpected Finds Protocol	To compensate for the low sampling density completed for the PSI, which included sampling from boreholes, we recommend that a robust unexpected finds protocol be prepared by a suitably qualified environmental consultant[16] and that this protocol be implemented during the development/construction phase of the project.

[16] JKE recommend that the consultancy engaged for the work be a member of the Australian Contaminated Land Consultants Associated (ACLCA), and/or the individual undertaking the works be certified under one of the NSW EPA endorsed certified practitioner schemes

13 LIMITATIONS

The report limitations are outlined below:

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

Important Information About This Report

These notes have been prepared by JKE to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors
This report has been prepared in response to specific project requirements as stated in the JKE proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

JKE will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the investigation. If the subject site is sold, ownership of the investigation report should be transferred by JKE to the new site owners who will be informed of the conditions and limitations under which the investigation was undertaken. No person should apply an investigation for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions
Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an investigation report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data
Site investigations identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an investigation indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Investigation Limitations
Although information provided by a site investigation can reduce exposure to the risk of the presence of contamination, no environmental site investigation can eliminate the risk. Even a rigorous professional investigation may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Investigations by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an investigation report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Investigation Report

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the investigation. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the investigation. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete investigation should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site investigation is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site investigation, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

Appendix A: Report Figures

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

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

Title: **SITE LOCATION PLAN**

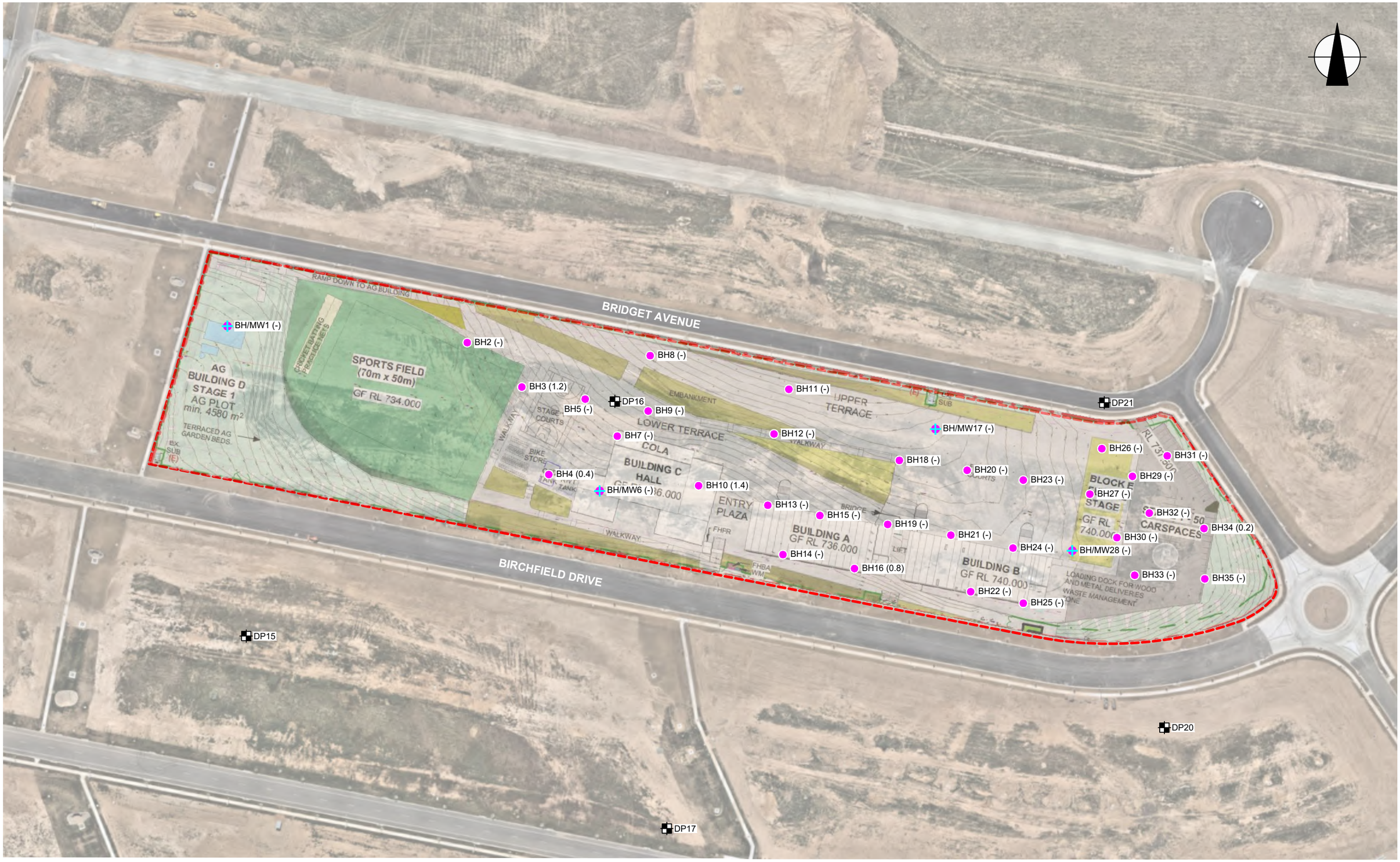
Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Project No: E37084PT

Figure No: 1

JKEnvironments

PLOT DATE: 3/10/2024 3:28:22 PM DWG FILE: K:\SC EIS JOBS\37000'S\E37084PT BUNGENDORE\CAD ZONE55\E37084PT.DWG



LEGEND

APPROXIMATE SITE BOUNDARY	
BH(Fill Depth)	BOREHOLE LOCATION, NUMBER AND DEPTH OF FILL (m)
BH/MW(Fill Depth)	BOREHOLE AND GROUNDWATER MONITORING WELL LOCATION, NUMBER AND DEPTH OF FILL (m)
DP16	DP ADDENDUM PSI 2017

AERIAL IMAGE SOURCE: MAPS.AU.NEARMAP.COM

0 15 30 45 60 75

SCALE 1:1500 @A3 METRES

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

Title: **SAMPLE LOCATION PLAN**

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Project No: E37084PT

Figure No: 2

JKEnvironments

PLOT DATE: 11/11/2024 4:02:51 PM DWG FILE: K:\5C EIS JOBS\37000\SIE37084PT BUNGENDORE\CAD ZONE55\E37084PT.DWG

Appendix B: Site Information and Site History

Lotsearch Environmental Risk and Planning Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 08 Oct 2024 09:59:43

Reference: LS062765 EP

Address: Bridget Avenue, Bungendore, NSW 2621

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

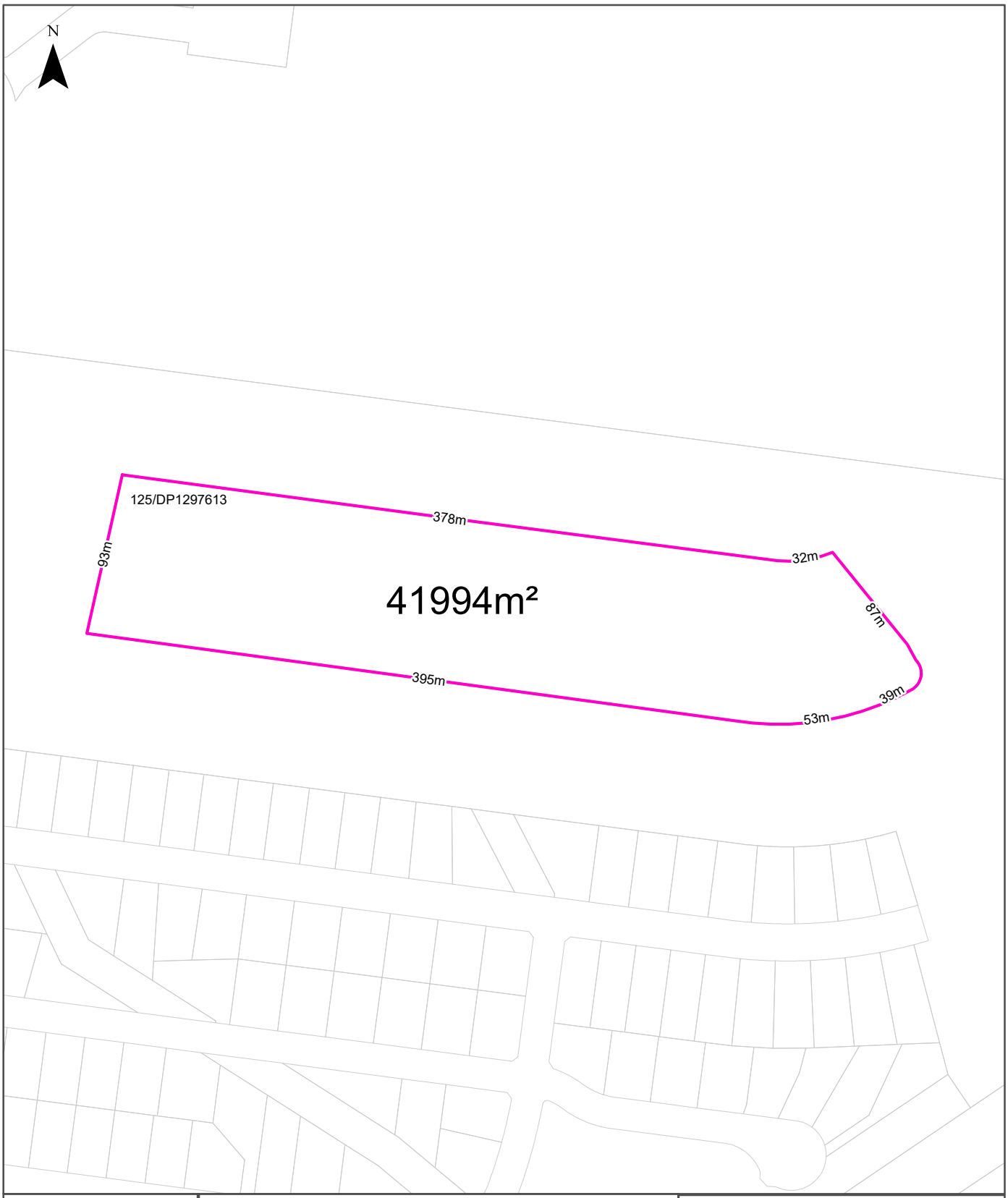
Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	24/07/2024	24/07/2024	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	21/05/2024	21/05/2024	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority NSW	02/09/2024	13/08/2024	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority NSW	02/09/2024	02/09/2024	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority NSW	06/08/2024	14/07/2021	Quarterly	1000m	0	0	0
Notices under the POEO Act 1997	Environment Protection Authority NSW	03/09/2024	03/09/2024	Monthly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	29/04/2024	29/11/2022	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	20/09/2023	07/09/2020	Annually	1000m	0	0	0
EPA PFAS Investigation Program	Environment Protection Authority NSW	24/09/2024	14/06/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Australian Department of Defence	24/09/2024	24/09/2024	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Australian Department of Defence	24/09/2024	24/09/2024	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	24/09/2024	24/09/2024	Monthly	2000m	0	0	0
Defence Controlled Areas	Australian Department of Defence	17/07/2024	17/07/2024	Quarterly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Australian Department of Defence	05/08/2024	02/09/2022	Quarterly	2000m	0	0	0
National Unexploded Ordnance (UXO)	Australian Department of Defence	17/07/2024	17/07/2024	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority NSW	13/11/2023	15/12/2022	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority NSW	26/08/2024	26/08/2024	Monthly	1000m	0	0	1
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority NSW	26/08/2024	26/08/2024	Monthly	1000m	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority NSW	26/08/2024	26/08/2024	Monthly	1000m	0	3	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	0	0
Points of Interest	NSW Department of Customer Service - Spatial Services	18/07/2024	18/07/2024	Quarterly	1000m	0	0	0
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	18/07/2024	18/07/2024	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	18/07/2024	18/07/2024	Quarterly	1000m	0	0	1
Major Easements	NSW Department of Customer Service - Spatial Services	09/08/2024	09/08/2024	Quarterly	1000m	0	0	1
State Forest	Forestry Corporation of NSW	12/12/2023	11/12/2023	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Geoscience Australia	17/04/2024	19/08/2019	Annually	1000m	2	2	2

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Climate Change, Energy, the Environment and Water	28/05/2024	23/02/2018	Quarterly	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	28/05/2024	20/06/2023	Annually	2000m	0	0	46
NSW Seamless Geology Single Layer: Rock Units	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	1	1	6
NSW Seamless Geology Single Layer: Geological Boundaries and Faults	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	0	0	2
NSW Seamless Geology Single Layer: Trendlines	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	0	0	0
NSW Seamless Geology Single Layer: Fold Axes	NSW Department of Primary Industries and Regional Development	17/05/2024	01/05/2024	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Department of Regional NSW	26/04/2024	14/03/2024	Annually	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	12/01/2024	17/02/2011	Annually	1000m	1	1	1
Soil Landscapes of Central and Eastern NSW	NSW Department of Climate Change, Energy, the Environment and Water	12/12/2023	27/07/2020	Annually	1000m	1	1	4
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Housing and Infrastructure	13/09/2024	16/08/2024	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	12/01/2024	21/02/2013	Annually	1000m	1	1	1
Dryland Salinity - National Assessment	Australian Bureau of Agricultural and Resource Economics and Sciences	03/06/2024	24/05/2024	Annually	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service	06/08/2024	06/08/2024	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Regional NSW	26/08/2024	26/08/2024	Monthly	1000m	0	0	1
Mining Title Applications	NSW Department of Regional NSW	26/08/2024	26/08/2024	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Regional NSW	26/08/2024	26/08/2024	Monthly	1000m	1	1	1
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Housing and Infrastructure	13/09/2024	08/09/2023	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Housing and Infrastructure	13/09/2024	30/08/2024	Monthly	1000m	1	2	14
Commonwealth Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Department of Climate Change, Energy, the Environment and Water	20/10/2023	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	29/07/2024	05/07/2024	Quarterly	1000m	0	0	0
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Housing and Infrastructure	13/09/2024	30/08/2024	Monthly	1000m	0	0	1
Bush Fire Prone Land	NSW Rural Fire Service	26/08/2024	19/07/2024	Monthly	1000m	0	1	3
NSW Native Vegetation Type Map	NSW Department of Climate Change, Energy, the Environment and Water	02/09/2024	30/11/2023	Quarterly	1000m	1	1	43
Ramsar Wetlands of Australia	Australian Department of Climate Change, Energy, the Environment and Water	16/05/2024	11/04/2024	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Terrestrial	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Collaborative Australian Protected Areas Database (CAPAD) 2022 - Marine	Australian Department of Climate Change, Energy, The Environment and Water	04/03/2024	30/06/2022	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/05/2024	28/05/2024	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Department of Climate Change, Energy, the Environment and Water	10/09/2024	10/09/2024	Monthly	10000m	-	-	-

Site Diagram

Bridget Avenue, Bungendore, NSW 2621



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 41994m²

Total Perimeter: 1.08km

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Scale: 0 25 50 100 150 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 04 October 2024

Contaminated Land

Bridget Avenue, Bungendore, NSW 2621

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist	Direction
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

Bridget Avenue, Bungendore, NSW 2621

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

Contaminated Land

Bridget Avenue, Bungendore, NSW 2621

EPA Notices

Penalty Notices, s.91 & s.92 Clean up Notices and s.96 Prevention Notices within the dataset buffer:

Map ID	Number	Type	Name	Address	Status	Issued Date	Act	Offence	Offence Date	Loc Conf	Dist	Dir
N/A	No records in buffer											

NSW EPA Notice Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Bridget Avenue, Bungendore, NSW 2621

National Waste Management Facilities Database

Sites on the National Waste Management Facilities Database within the dataset buffer:

Map ID	Owner	Name	Address	Management Type	Facility Type	Status	Loc Conf	Dist	Dir
N/A	No records in buffer								

Source: Waste Management Facilities Database

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
N/A	No records in buffer										

National Liquid Fuel Facilities Data Source: Geoscience Australia

PFAS Investigation & Management Programs

Bridget Avenue, Bungendore, NSW 2621

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Map ID	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites and Unexploded Ordnance

Bridget Avenue, Bungendore, NSW 2621

Defence Controlled Areas (DCA)

Defence Controlled Areas provided by the Department of Defence within the dataset buffer:

Site ID	Location Name	Loc Conf	Dist	Dir
N/A	No records in buffer			

Defence Controlled Areas, Data Custodian: Department of Defence, Australian Government

Defence 3 Year Regional Contamination Investigation Program (RCIP)

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

National Unexploded Ordnance (UXO)

Sites which have been assessed by the Department of Defence for the potential presence of unexploded ordnance within the dataset buffer:

Site ID	Location Name	Category	Area Description	Additional Information	Commonwealth	Loc Conf	Dist	Dir
N/A	No records in buffer							

National Unexploded Ordnance (UXO), Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

Bridget Avenue, Bungendore, NSW 2621

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

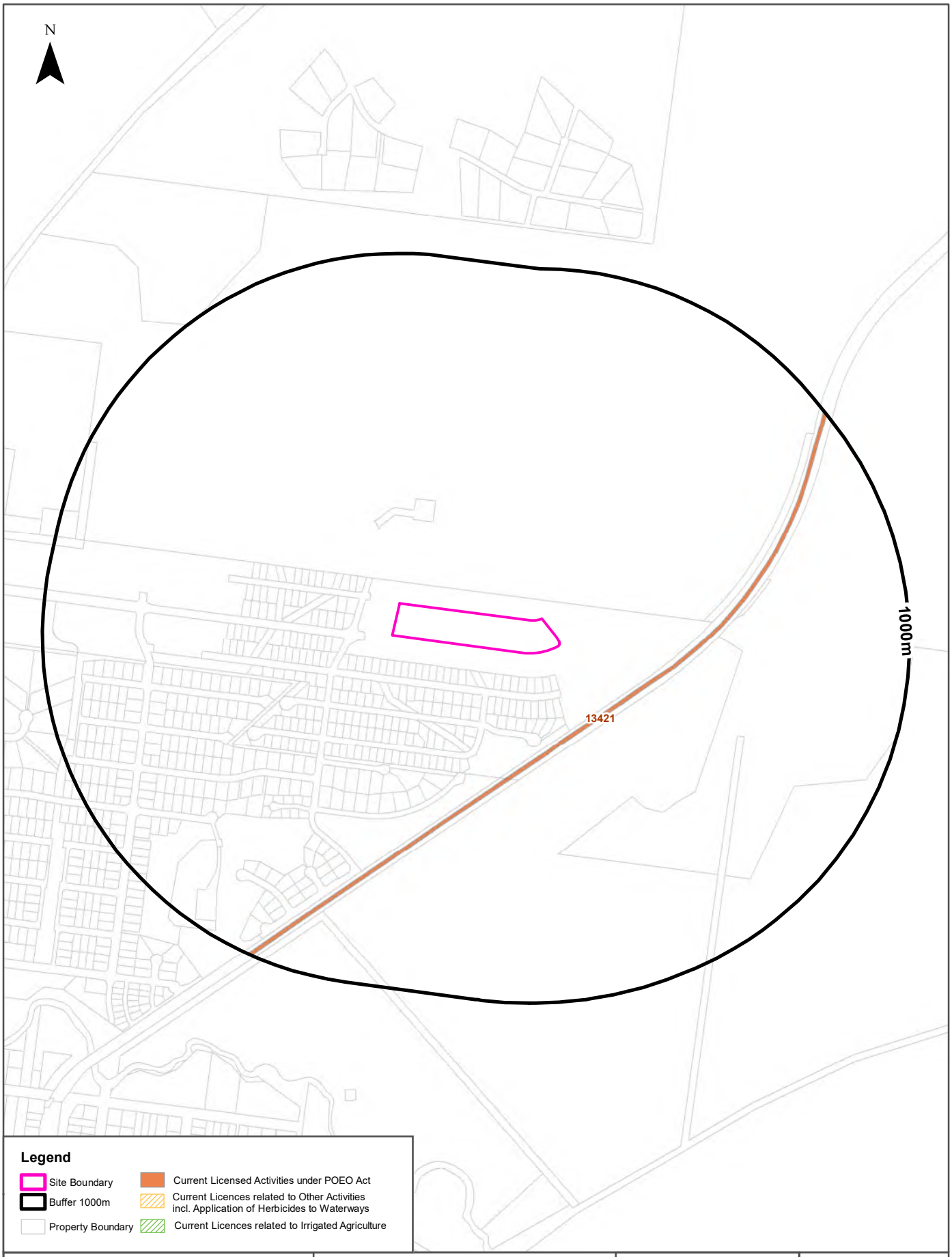
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

Current EPA Licensed Activities

Bridget Avenue, Bungendore, NSW 2621



Scale:	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024	Coordinate System: GDA 1994 MGA Zone 56	Date: 08 October 2024

0 100 200 400 600
Meters

EPA Activities

Bridget Avenue, Bungendore, NSW 2621

Licensed Activities under the POEO Act 1997

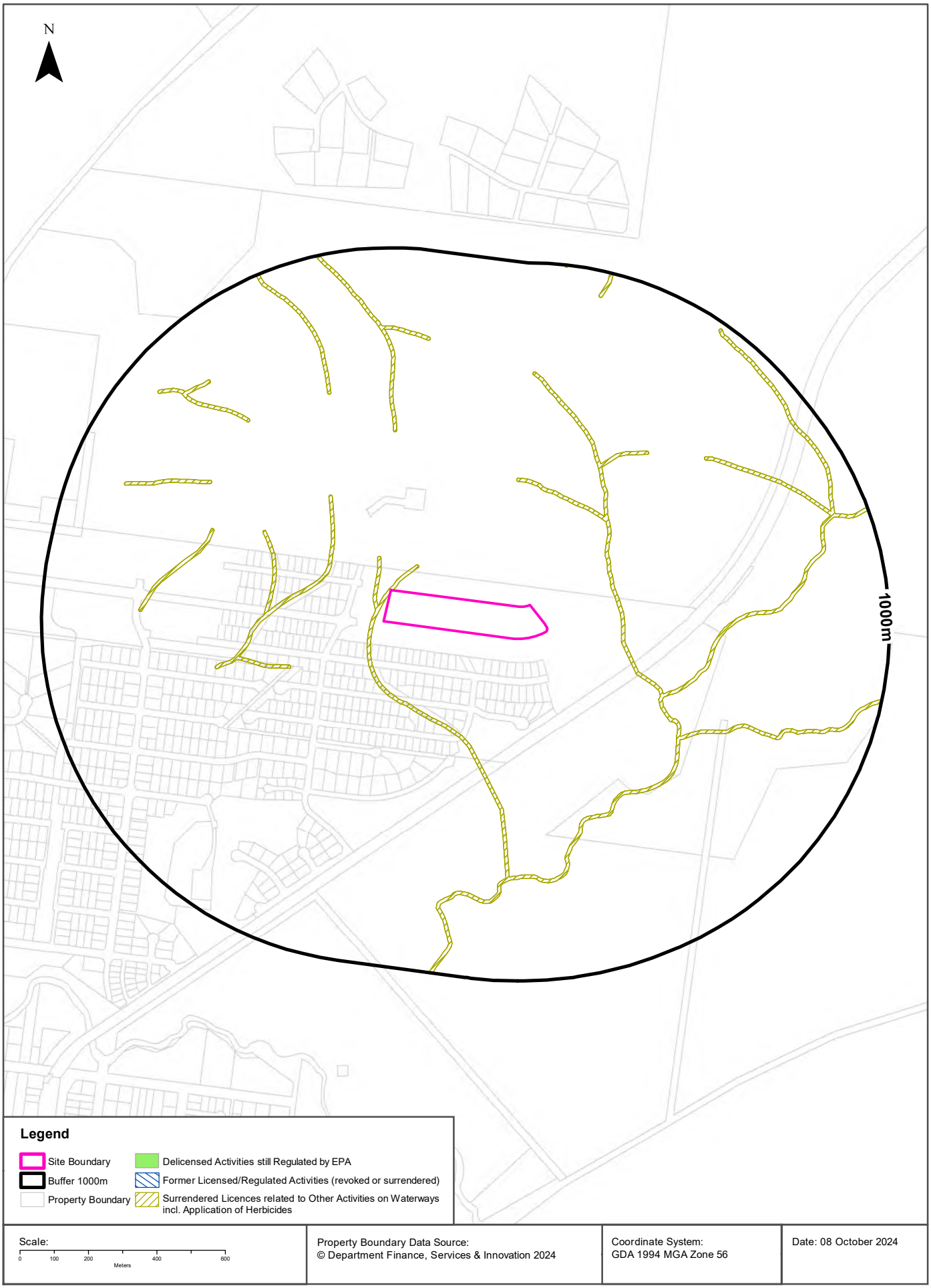
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
13421	UGL REGIONAL LINX PTY LTD		COUNTRY REGIONAL NETWORK, ORANGE, NSW 2800		Railway systems activities	Network of Features	228m	South East

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Bridget Avenue, Bungendore, NSW 2621



EPA Activities

Bridget Avenue, Bungendore, NSW 2621

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	East
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	East
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	0m	East

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Bridget Avenue, Bungendore, NSW 2621

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

Business Directory Records 1950-1991
Road or Area Matches

Potentially contaminative business activities extracted from Universal Business Directories from years 1991, 1982, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Historical Business Directories

Bridget Avenue, Bungendore, NSW 2621

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
N/A	No records in buffer						

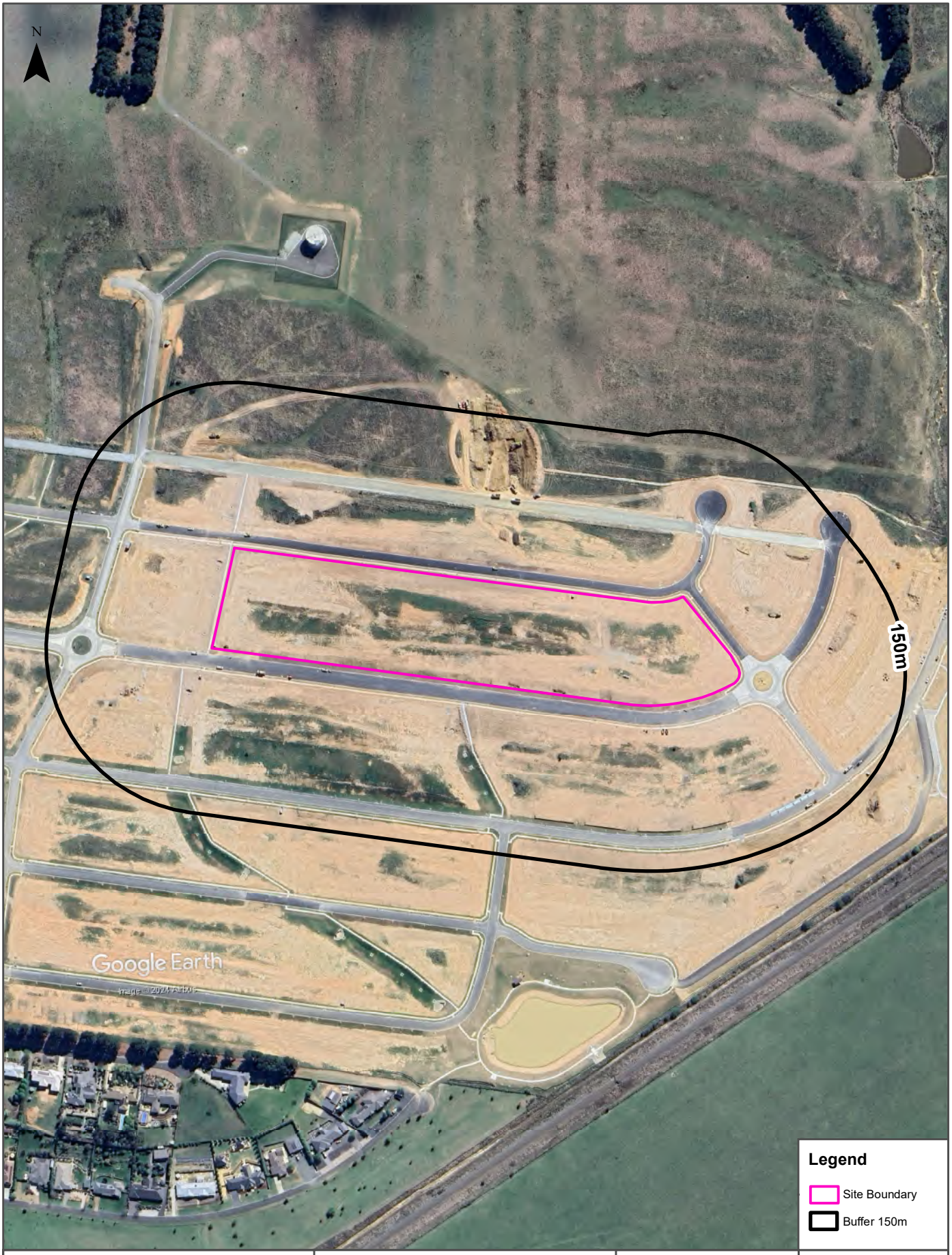
Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
N/A	No records in buffer					

Aerial Imagery 2023

Bridget Avenue, Bungendore, NSW 2621



Scale:
0 50 100 150 200
Meters

Data Source Aerial Imagery: © 2024 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

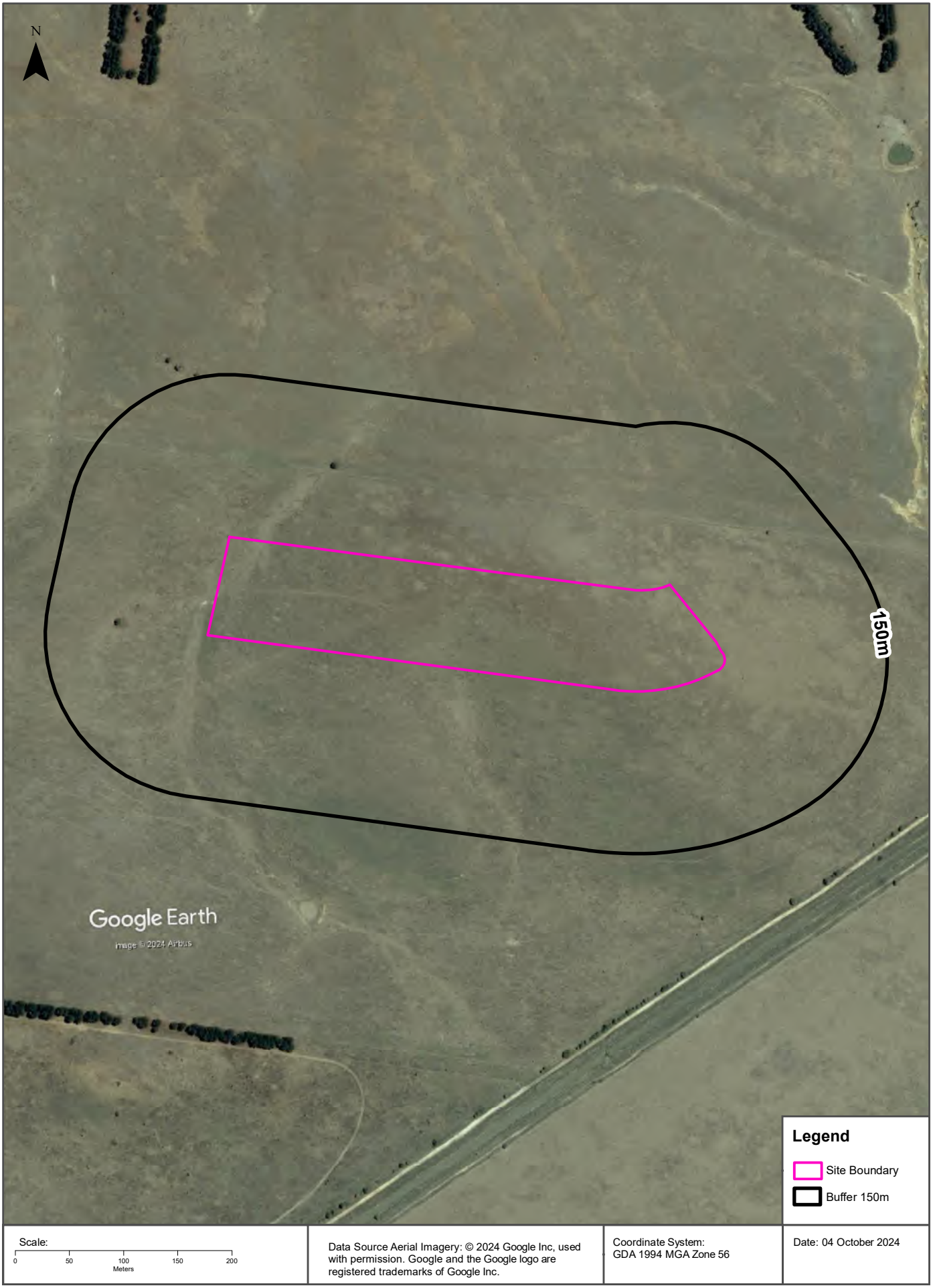
Date: 04 October 2024

Aerial Imagery 2013

Bridget Avenue, Bungendore, NSW 2621

Aerial Imagery 2002

Bridget Avenue, Bungendore, NSW 2621

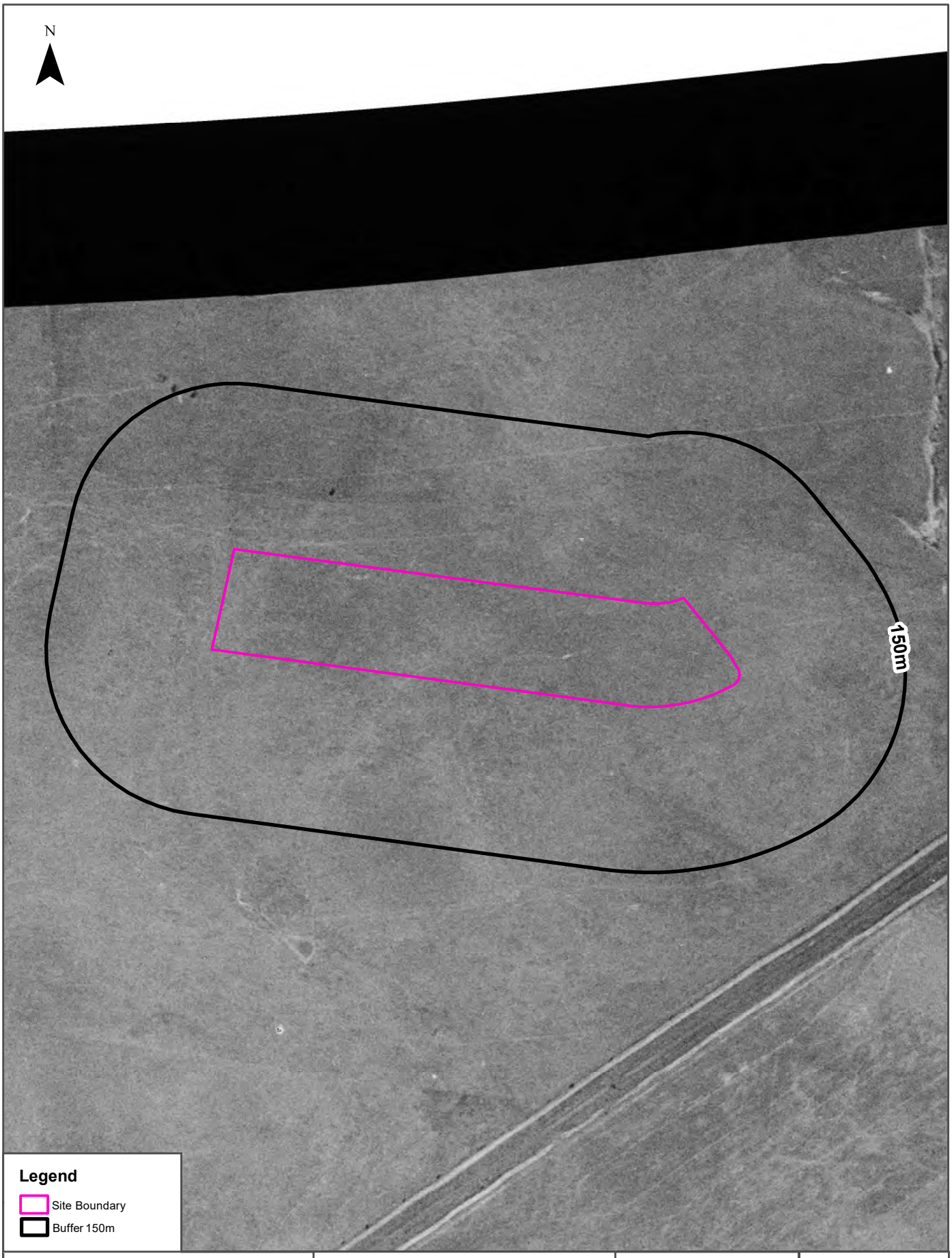


Aerial Imagery 1992

Bridget Avenue, Bungendore, NSW 2621

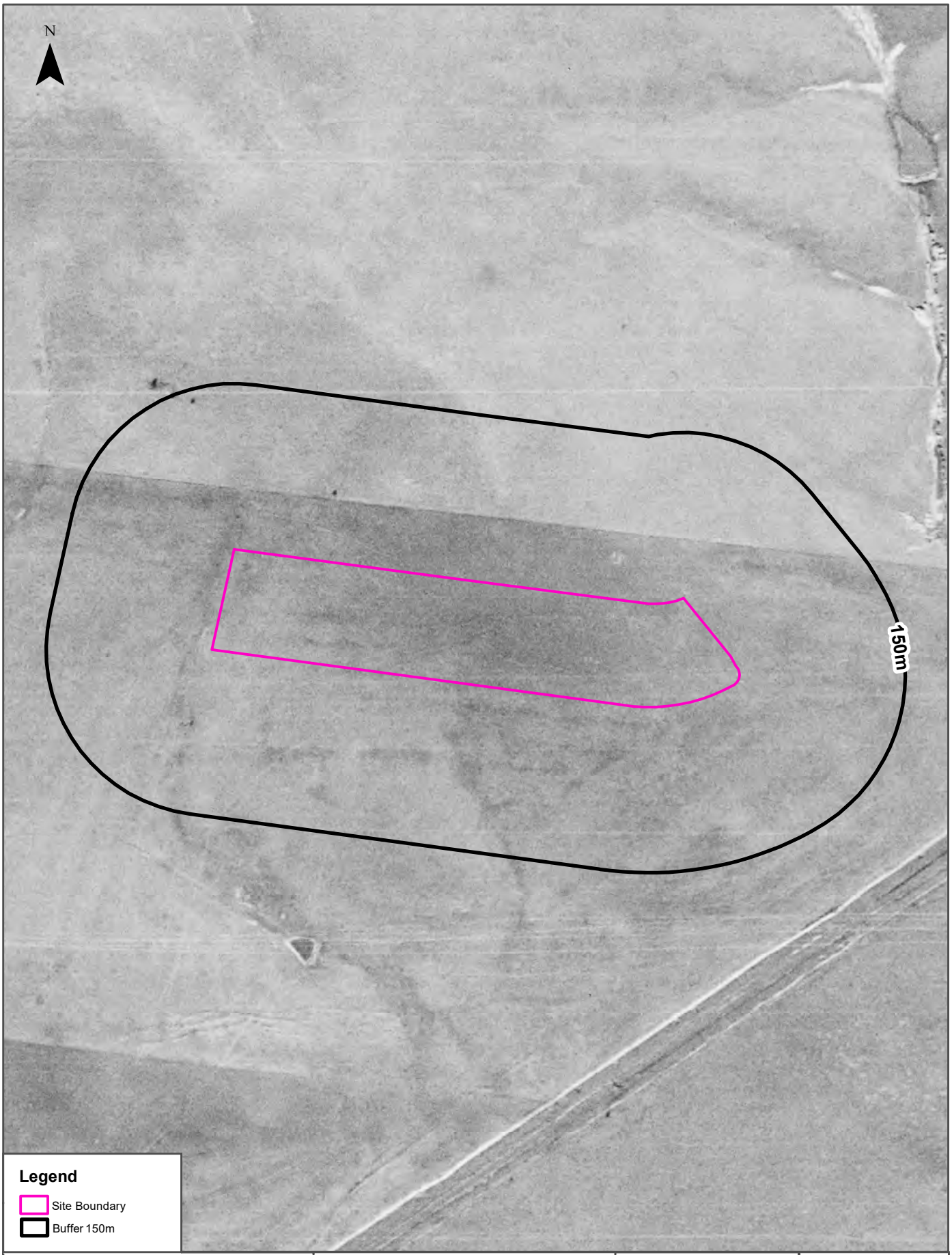
Aerial Imagery 1985

Bridget Avenue, Bungendore, NSW 2621



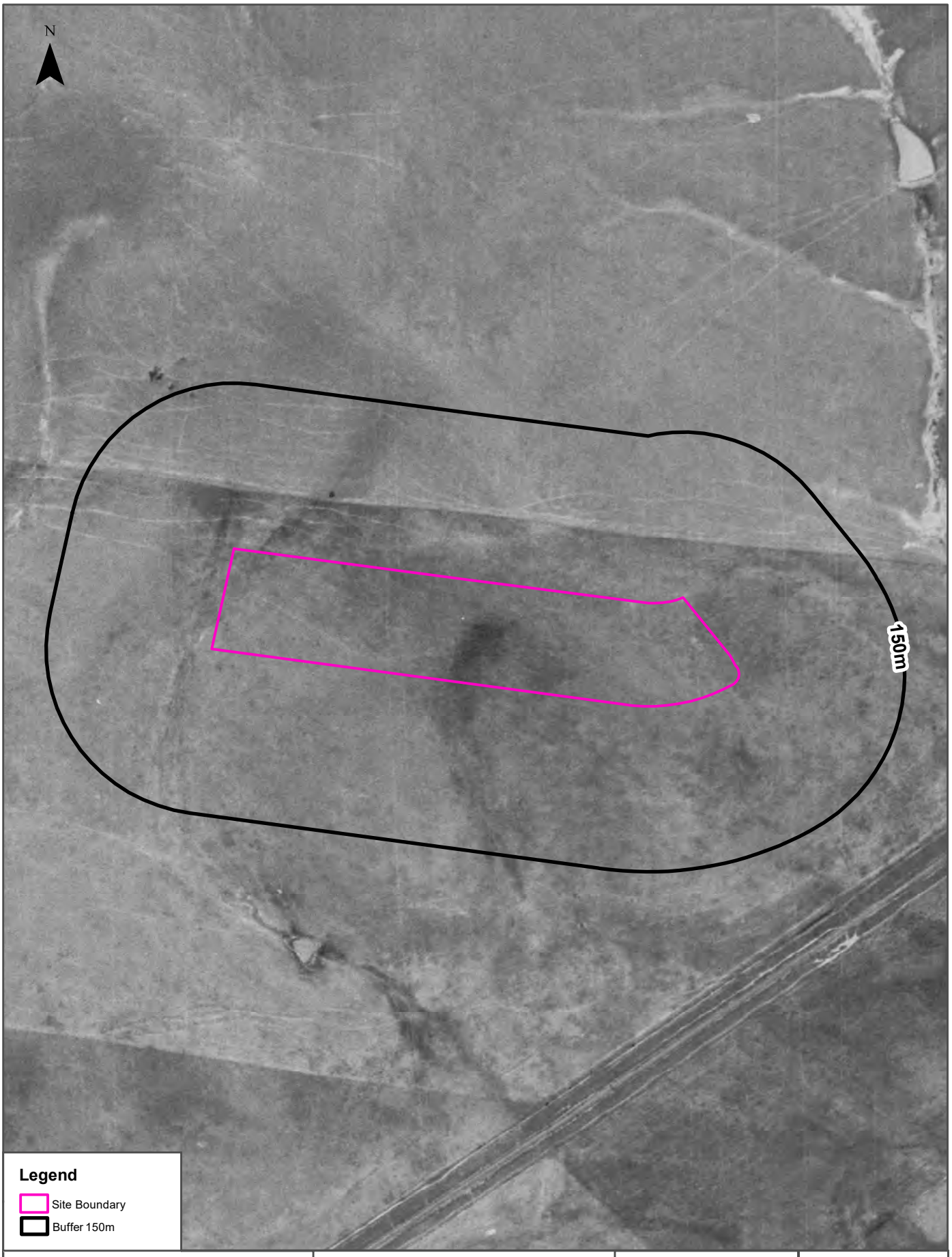
Aerial Imagery 1976

Bridget Avenue, Bungendore, NSW 2621



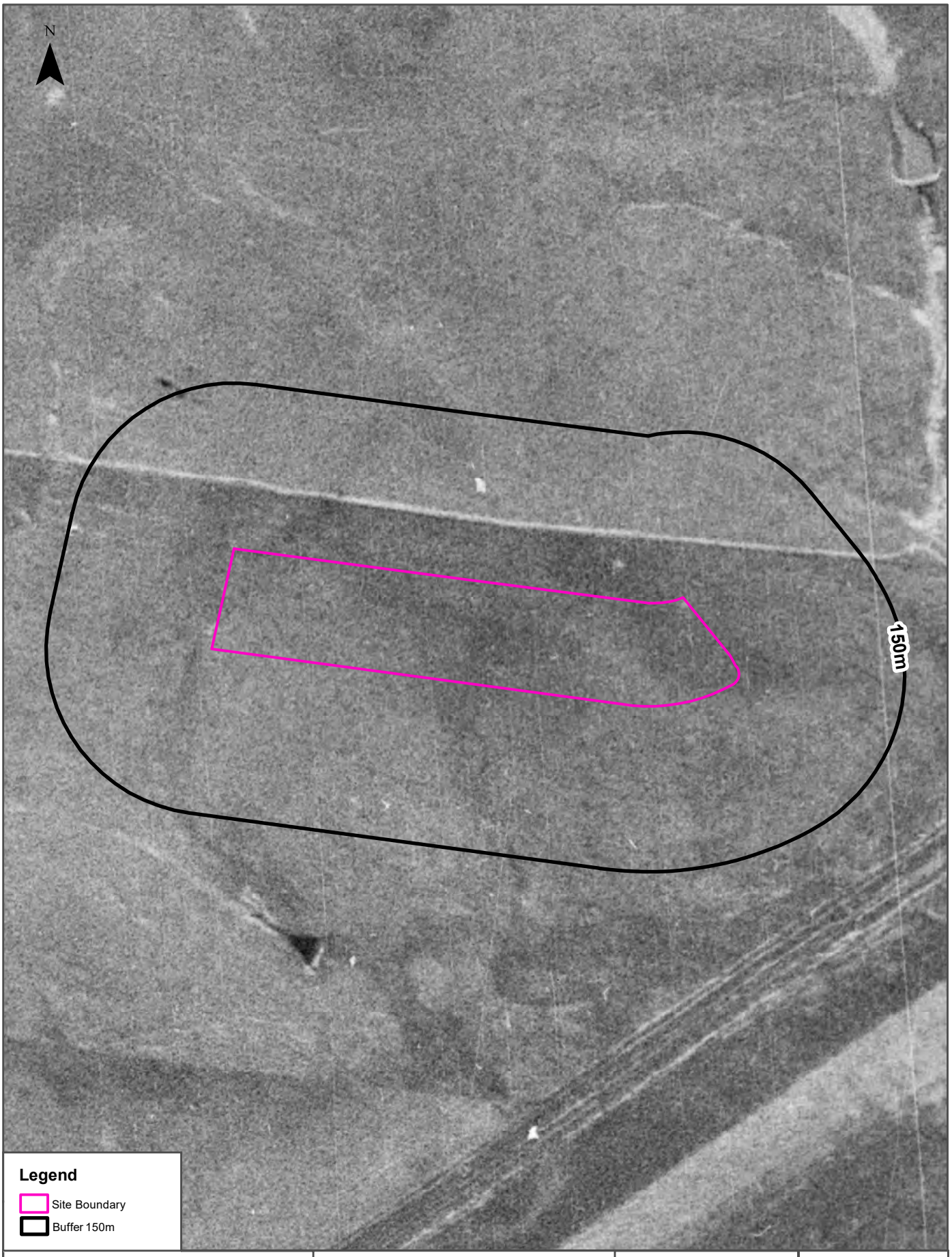
Aerial Imagery 1968

Bridget Avenue, Bungendore, NSW 2621



Aerial Imagery 1959

Bridget Avenue, Bungendore, NSW 2621

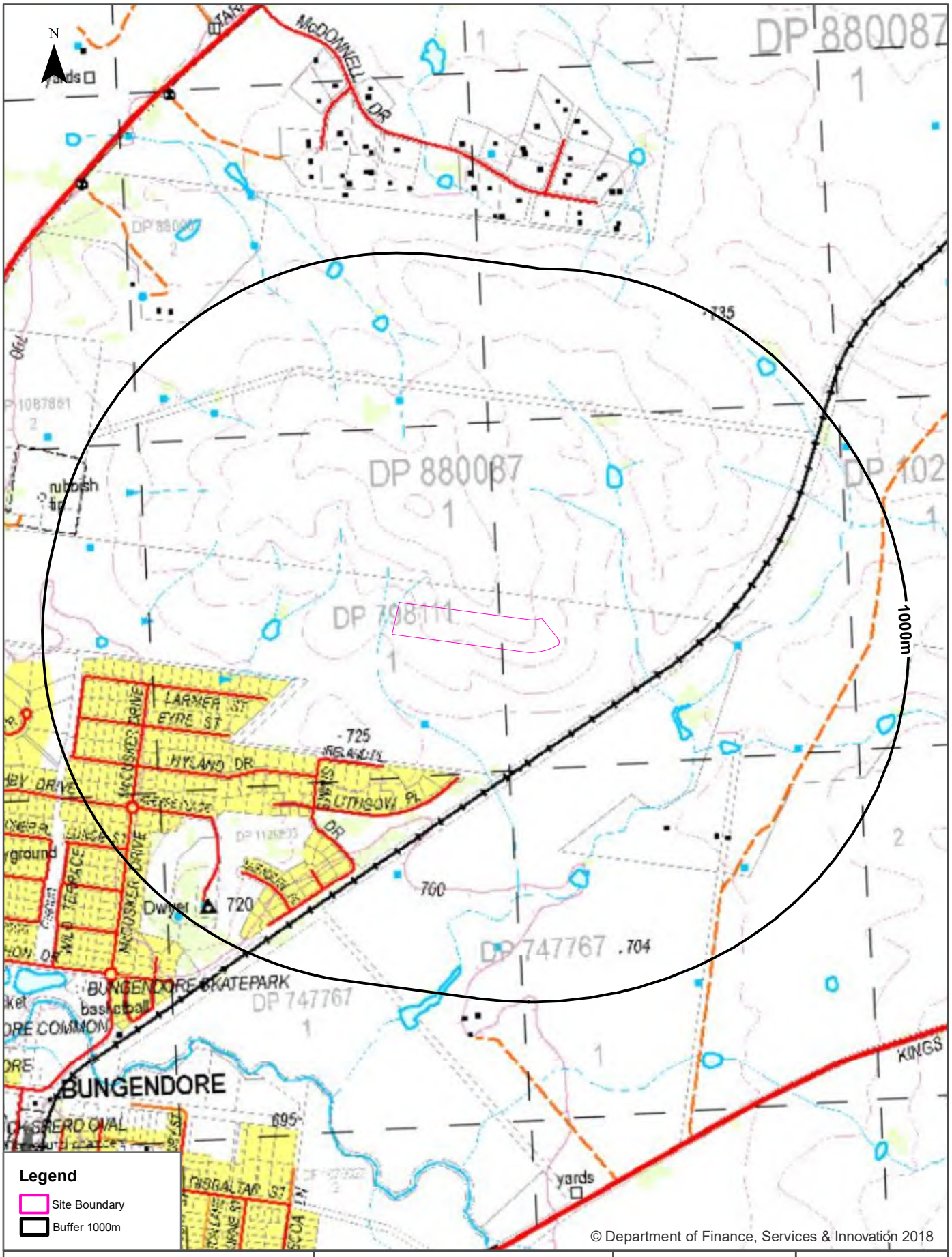


Aerial Imagery 1944

Bridget Avenue, Bungendore, NSW 2621

Topographic Map 2015

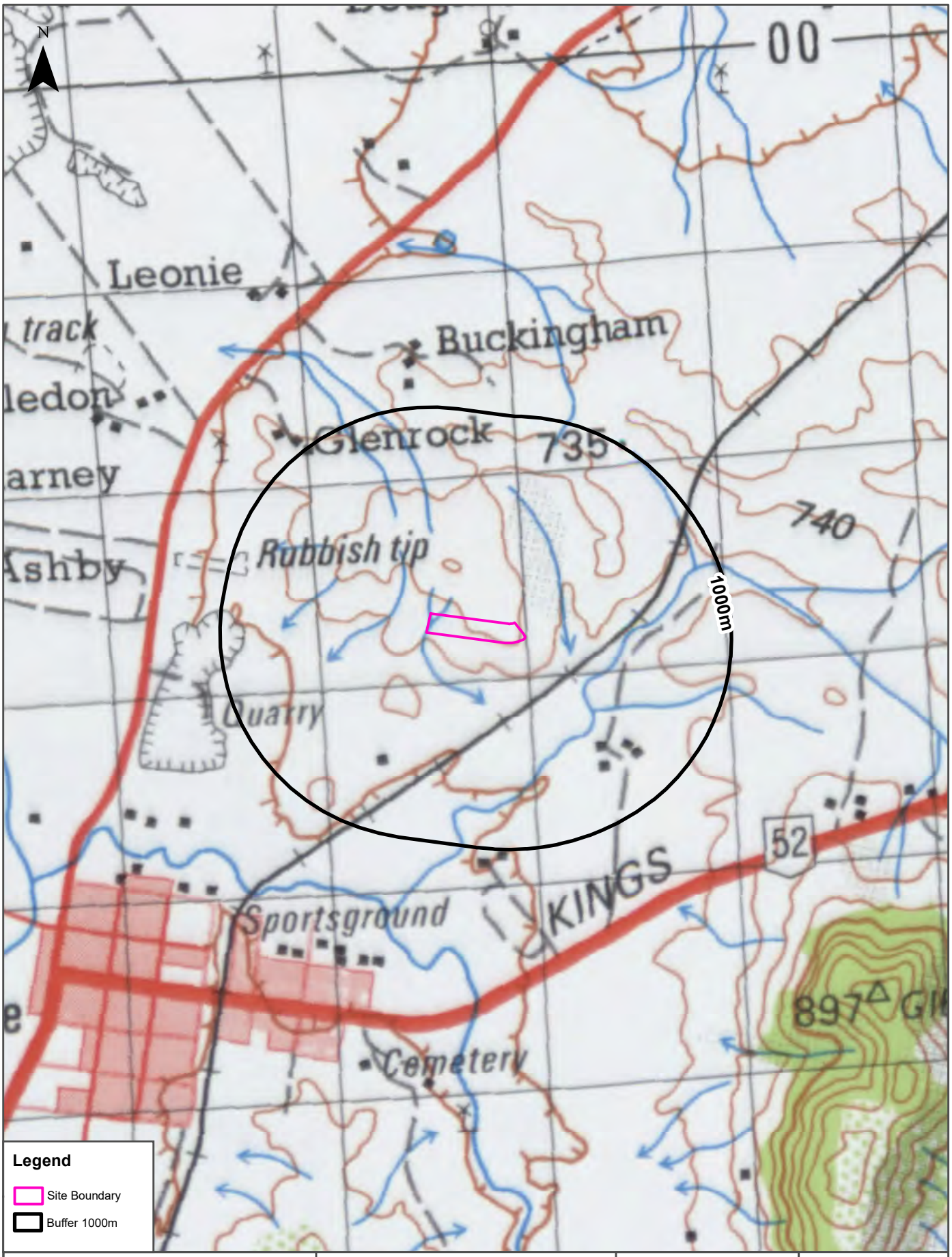
Bridget Avenue, Bungendore, NSW 2621



Scale: 0 175 350 525 700 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 08 October 2024

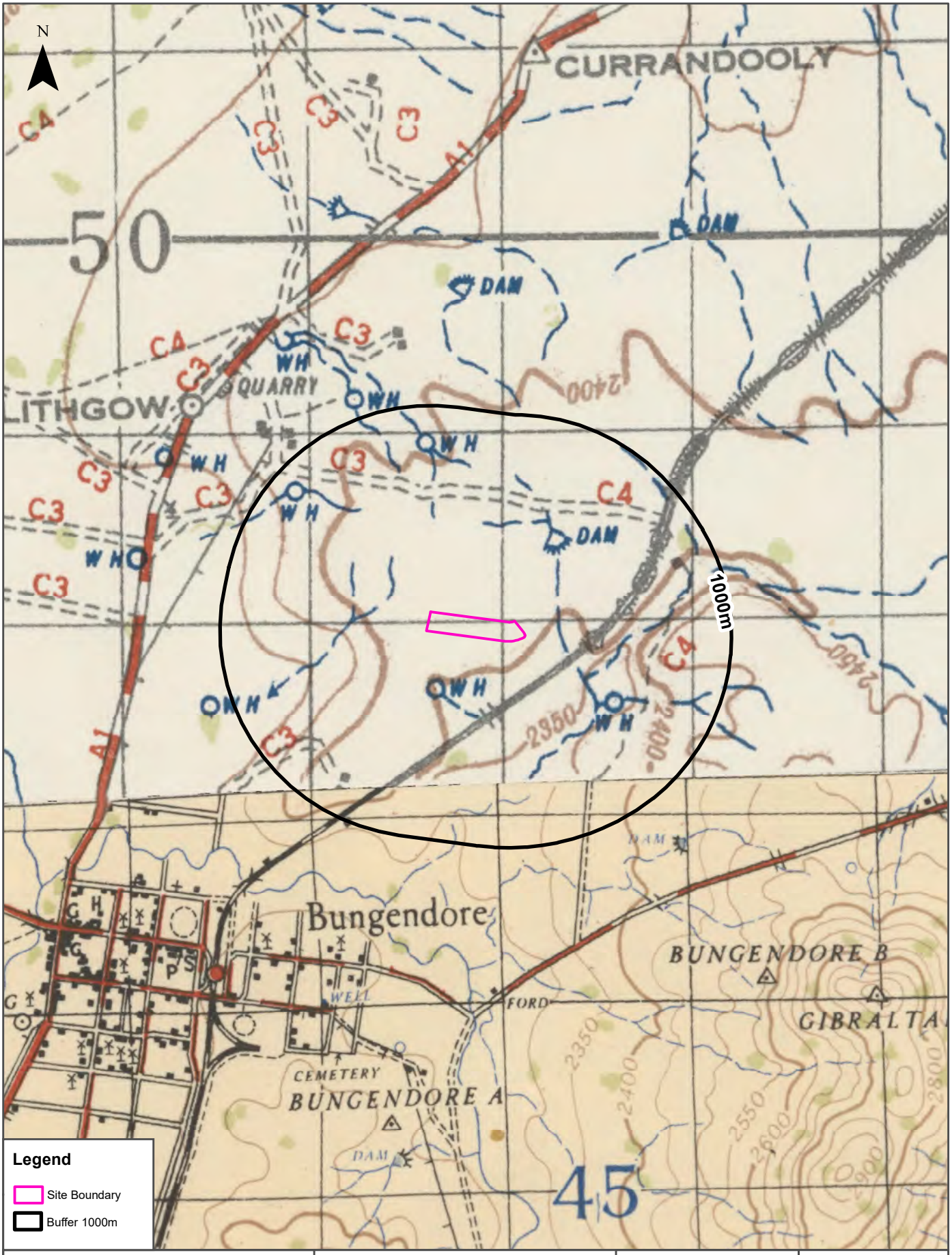
Historical Map 1987

Bridget Avenue, Bungendore, NSW 2621



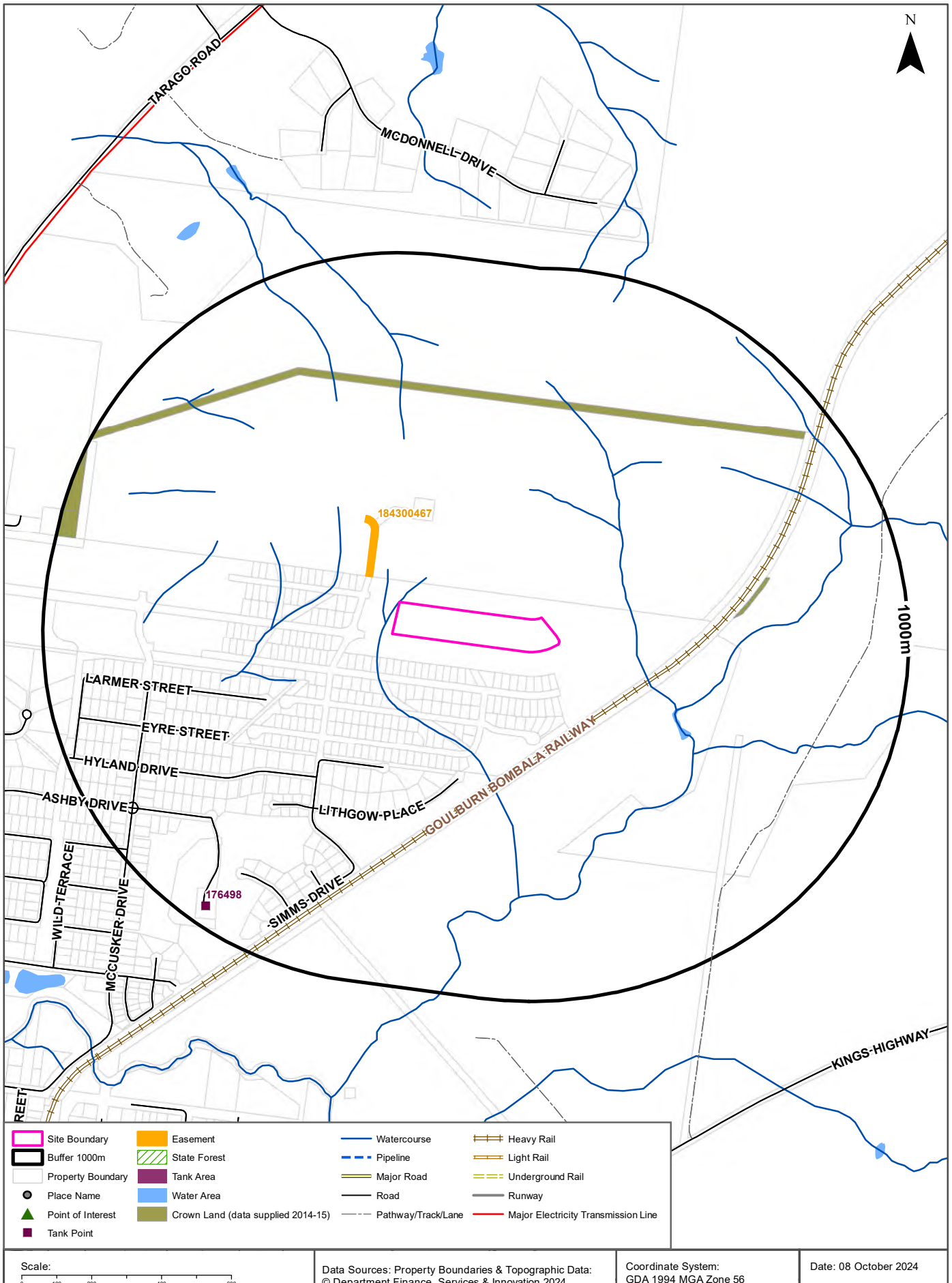
Historical Map c.1942

Bridget Avenue, Bungendore, NSW 2621



Topographic Features

Bridget Avenue, Bungendore, NSW 2621



Topographic Features

Bridget Avenue, Bungendore, NSW 2621

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
N/A	No records in buffer			

Topographic Features

Bridget Avenue, Bungendore, NSW 2621

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
N/A	No records in buffer					

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
176498	Water	Operational		21/10/2010	945m	South West

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
184300467	Primary	Right of way	18m	107m	North West

Topographic Features

Bridget Avenue, Bungendore, NSW 2621

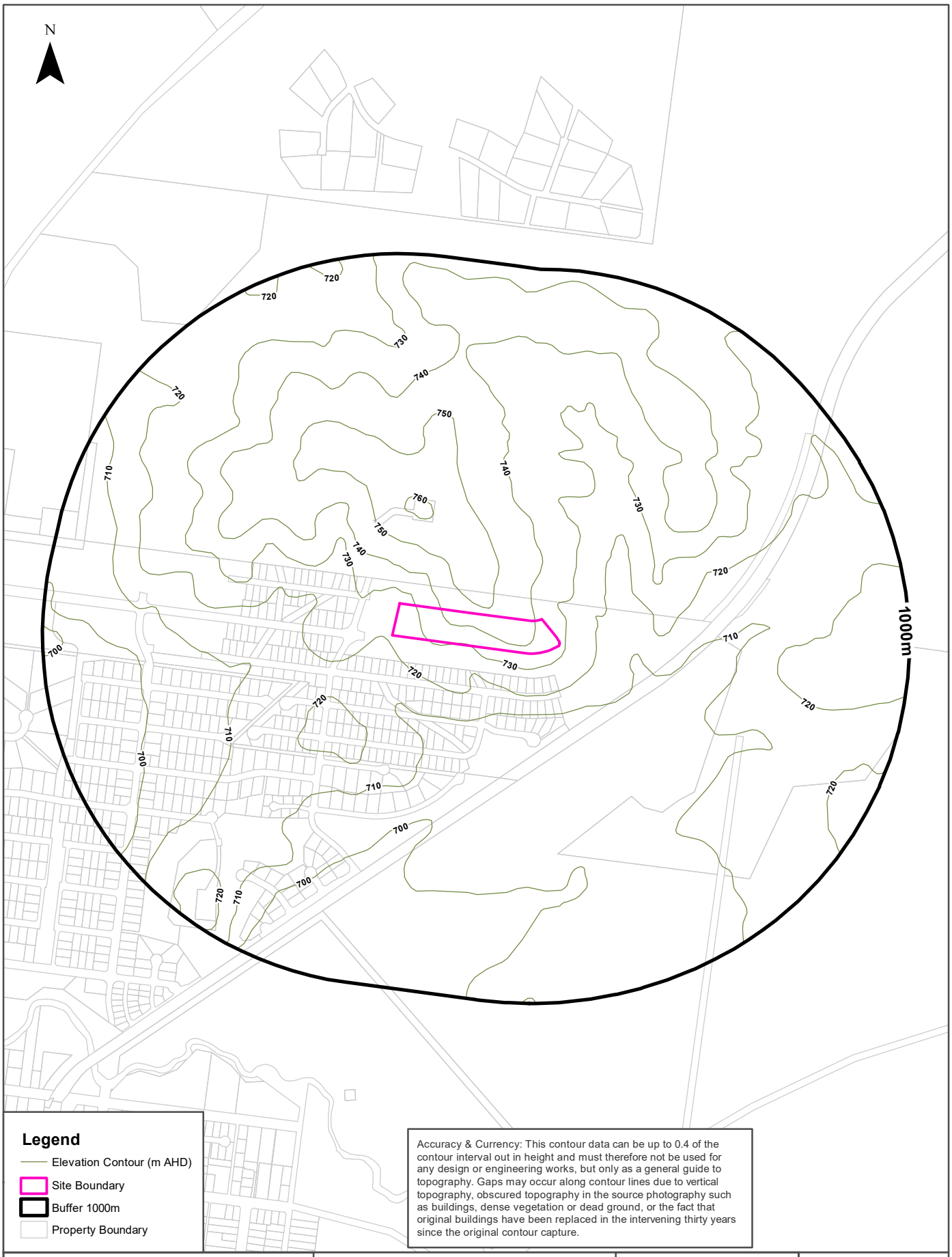
State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

Elevation Contours (m AHD)

Bridget Avenue, Bungendore, NSW 2621



Hydrogeology & Groundwater

Bridget Avenue, Bungendore, NSW 2621

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site
Fractured or fissured, extensive aquifers of low to moderate productivity	0m	On-site

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

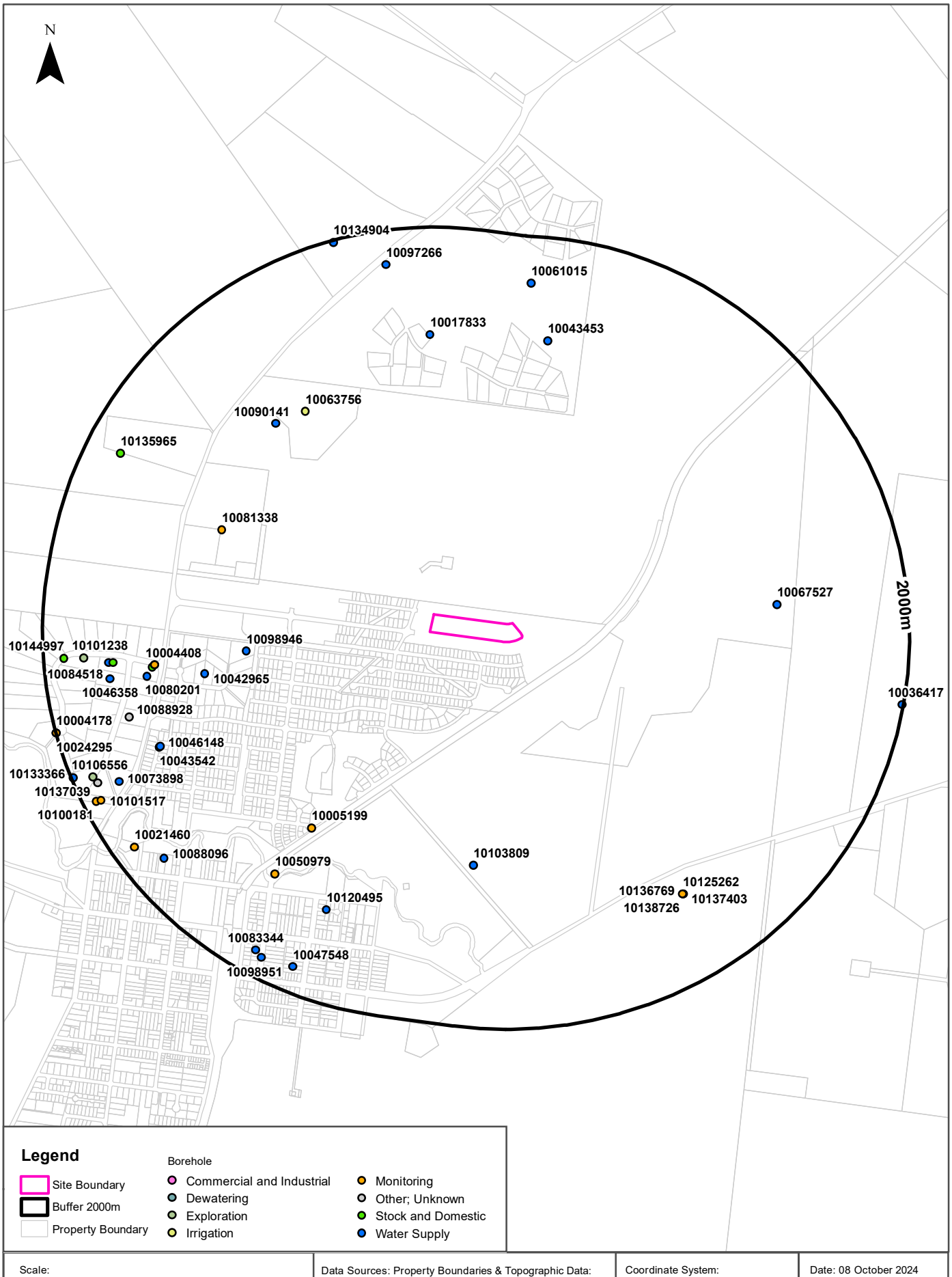
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

Bridget Avenue, Bungendore, NSW 2621



Hydrogeology & Groundwater

Bridget Avenue, Bungendore, NSW 2621

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10098946	GW402589	Water Supply	Unknown	14/10/2003	54.00		AHD		1.188	11.00	952m	West
10103809	GW025428	Water Supply	Unknown	01/08/1969	10.10		AHD				1164m	South
10081338	GW416178	Monitoring	Unknown	29/05/2013	16.50		AHD			10.30	1177m	West
10042965	GW402475	Water Supply	Unknown	18/07/2003	18.00		AHD		1.500	9.10	1180m	West
10005199	GW417812	Monitoring	Functioning	15/01/2009	18.00		AHD				1182m	South West
10063756	GW403953	Irrigation	Unknown	01/01/1999	30.00		AHD			9.50	1238m	North West
10090141	GW401139	Water Supply	Unknown	08/02/2000	60.00		AHD	500	1.200	19.00	1278m	North West
10067527	GW400814	Water Supply	Unknown	09/04/1998	72.00		AHD	Fresh	0.250	17.00	1326m	East
10004408	GW417799	Monitoring	Functioning	15/01/2009	17.80		AHD				1431m	West
10024292	GW417799	Monitoring	Functioning	15/01/2009	60.00		AHD				1431m	West
10135110	GW030707	Stock and Domestic	Abandoned	01/01/1976	22.00		AHD	0-500 ppm	0.760	3.30	1442m	West
10017833	GW027165	Water Supply	Unknown	01/04/1967	30.50		AHD				1444m	North
10043453	GW403845	Water Supply	Unknown	14/09/1994	80.00		AHD	875	5.800	10.00	1467m	North
10080201	GW414771	Water Supply	Functioning	01/01/2002	8.00		AHD				1477m	West
10050979	GW416600	Monitoring	Functional	15/01/2015	5.10		AHD			4.35	1485m	South West
10046148	GW401590	Water Supply	Unknown	26/03/2001	115.00		AHD		5.100		1512m	West
10043542	GW401591	Water Supply	Unknown	01/10/2000	72.00		AHD		7.900	7.00	1518m	West
10120495	GW025806	Water Supply	Unknown	01/01/1945	7.90		AHD	0-500 ppm			1532m	South West
10138726	GW085059	Monitoring	Proposed	15/06/1992	8.00		AHD				1564m	South East
10125262	GW085060	Monitoring	Proposed	15/06/1992	3.00		AHD				1565m	South East
10136769	GW085057	Monitoring	Proposed	18/05/1991	7.89		AHD				1565m	South East
10137403	GW085058	Monitoring	Proposed	15/06/1992			AHD				1565m	South East
10088928	GW402817	Unknown	Unknown	20/07/2004	90.00		AHD	Fresh	1.000	15.00	1613m	West
10134816	GW030708	Stock and Domestic	Removed	01/02/1976	24.50		AHD	0-500 ppm		7.40	1642m	West
10084518	GW416189	Water Supply	Functioning	18/12/2012	36.00		AHD		4.000	10.00	1664m	West
10046358	GW404636	Water Supply	Functioning	01/12/1998	26.00		AHD		15.000	3.00	1667m	West
10061015	GW065036	Water Supply	Unknown	05/09/1989	78.00		AHD	501-1000 ppm			1756m	North
10073898	GW416158	Water Supply	Functioning	07/12/2012	31.00		AHD		1.263	9.00	1780m	South West
10101238	GW030816	Exploration	Proposed	01/07/1980			AHD				1792m	West
10088096	GW404164	Water Supply	Functioning	21/09/2004	42.00		AHD	200	0.750	2.00	1802m	South West

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10135965	GW030705	Stock and Domestic	Removed	01/12/1975	23.00		AHD			1.40	1818m	North West
10097266	GW067624	Water Supply	Removed	02/11/1987	24.40		AHD	774	1.000	10.00	1820m	North
10047548	GW404621	Water Supply	Functioning	16/07/2008	30.00		AHD	Good	0.260	10.00	1869m	South West
10083344	GW403783	Water Supply	Unknown	09/02/2003	50.00		AHD		0.375	28.00	1875m	South West
10137039	GW031362	Unknown	Unknown	01/01/1965	45.70		AHD				1882m	West
10021460	GW400104	Monitoring	Unknown	24/01/1995	73.00		AHD	Fresh			1887m	South West
10144997	GW030709	Stock and Domestic	Removed	01/02/1976	42.00		AHD	0-500 ppm	0.320	5.00	1893m	West
10098951	GW402023	Water Supply	Unknown	15/10/2002	22.00		AHD		3.000	10.00	1894m	South West
10106556	GW030809	Exploration	Proposed	01/08/1980			AHD				1894m	West
10101517	GW402040	Monitoring	Unknown	15/03/2002	84.00		AHD	0.71	19.000	8.00	1906m	South West
10100181	GW402039	Monitoring	Unknown	15/03/2002	84.00		AHD	0.34	0.800	6.00	1930m	South West
10134904	GW048576	Water Supply	Unknown	01/08/1978	24.40		AHD				1988m	North
10133366	GW031363	Water Supply	Functioning	01/01/1965	111.90		AHD				1989m	West
10036417	GW405019	Water Supply	Functioning	20/03/2009	86.00		AHD		14.364	7.20	1993m	East
10004178	GW417798	Monitoring	Functioning	15/01/2009	9.80		AHD				1998m	West
10024295	GW417798	Monitoring	Functioning	15/01/2009	16.60		AHD				1998m	West

Hydrogeology & Groundwater

Bridget Avenue, Bungendore, NSW 2621

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

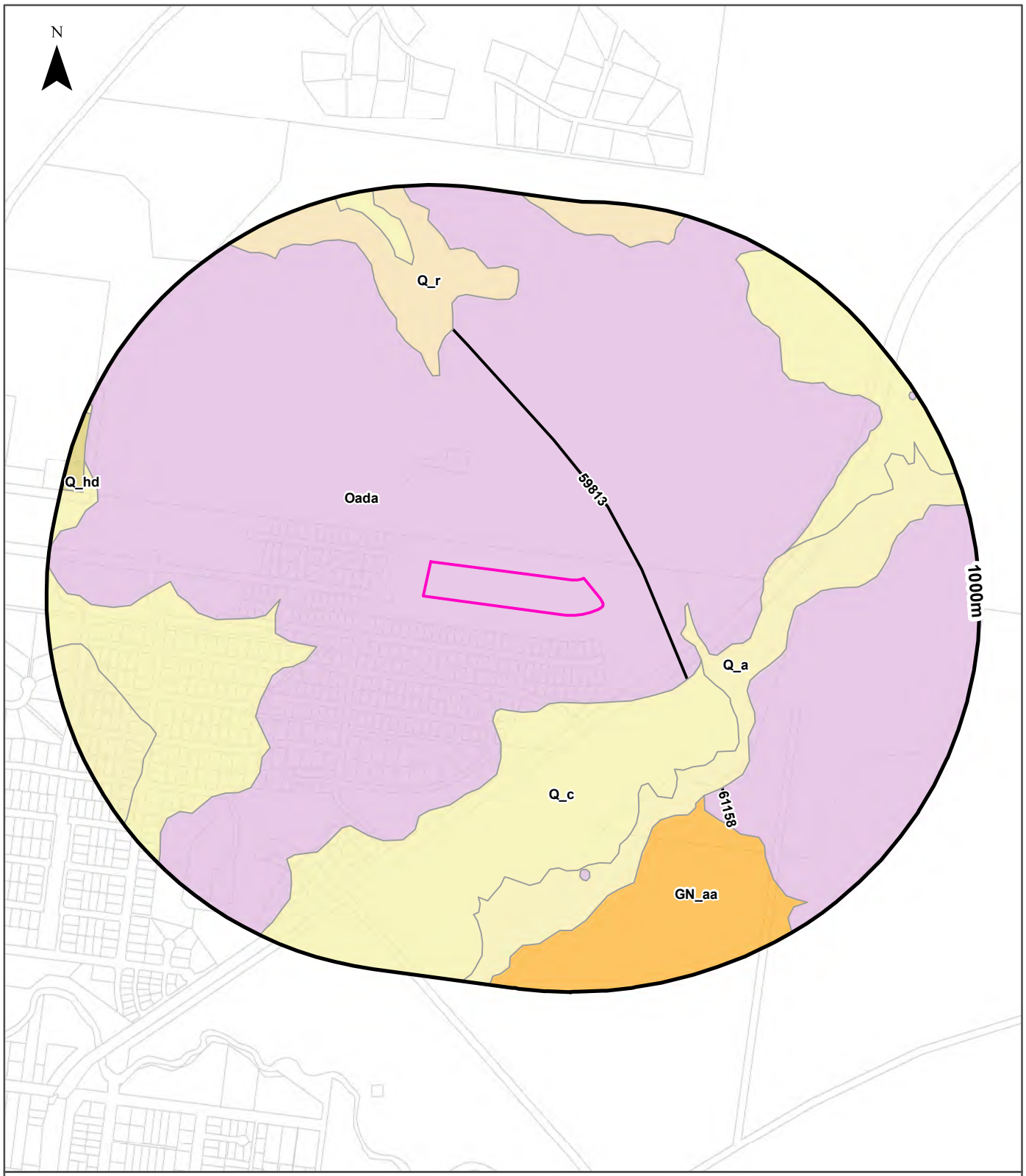
NGIS Bore ID	Drillers Log	Distance	Direction
10098946	0.00m-9.00m Soil, loamy clay 9.00m-28.00m Shale, yellow brown, weathered 28.00m-54.00m Shale, grey blue, quartz bands	952m	West
10103809	0.00m-0.30m Loam Sandy 0.30m-0.91m Clay Dark Grey 0.91m-1.22m Clay Yellow Sandy 1.22m-3.05m Sand Yellow Gravel 3.05m-3.66m Sand Medium Gravel 3.66m-5.18m Gravel Grey Clay 5.18m-5.49m Gravel Fine Medium 5.49m-7.01m Gravel Clay 7.01m-7.16m Sand Fine Gravel 7.16m-7.92m Clay Grey Gravel 7.92m-8.23m Sand Fine Medium 7.92m-8.23m Sandstone Gravel 8.23m-10.06m Sand Rock Green Dark Blue	1164m	South
10042965	0.00m-5.00m Soil, loamy clays 5.00m-12.00m Sand, weathered and loamy 12.00m-18.00m Sand, large gravel	1180m	West
10090141	0.00m-1.00m TOP SOIL 1.00m-3.00m CLAY, BROWN 3.00m-42.00m SHALE, PINK, BROWN, YELLOW, GREY 42.00m-57.00m SHALE, GREY HARD 57.00m-60.00m SHALE	1278m	North West
10067527	0.00m-0.50m Topsoil 0.50m-3.00m Red brown clay 3.00m-15.00m Yellow brown decomposed shale 15.00m-27.00m Soft brown shale 27.00m-72.00m Fractured grey black shale	1326m	East
10017833	0.00m-0.30m Topsoil 0.30m-2.44m Clay 2.44m-9.14m Clay Shaley 9.14m-24.08m Shale Water Supply 24.08m-27.43m Shale Yellow 27.43m-30.48m Rock Green Soft	1444m	North
10043453	0.00m-10.00m SAND QUARTZ GRAVEL ORANGE 10.00m-13.00m RED WEATHERED SHALE 13.00m-21.00m ORANGE SAND 21.00m-32.00m WEATHERED SHALE 32.00m-66.00m FRACTURED GREY BLACK SHALE AND SILTSTONE 66.00m-80.00m FRESH FRACTURED GRANITE	1467m	North
10050979	0.00m-1.00m sandy clay 1.00m-2.20m fine sand 2.20m-5.10m gravel, medium	1485m	South West
10046148	0.00m-7.00m Clay 7.00m-8.00m Coarse sand 8.00m-8.90m Gravel 8.90m-46.00m Siliceous phyllite with quartz veins 46.00m-50.00m Siliceous phyllite 50.00m-56.00m Granite dyke 56.00m-115.00m Siliceous phullite with minor quartz veins	1512m	West
10043542	0.00m-5.00m Clay 5.00m-8.00m Gravel 8.00m-14.00m Ckat 14.00m-31.00m Siliceous phullite with quartz veins 31.00m-41.00m Siliceous phyllite 41.00m-47.00m Grantie dyke 47.00m-68.00m Siliceous phullite 68.00m-72.00m Medium grained sandstone	1518m	West
10120495	0.00m-5.49m Loam Sandy 5.49m-7.92m Sand Wet Water Supply	1532m	South West
10088928	0.00m-5.00m brown sticky clay 5.00m-15.00m Gravels sand 15.00m-60.00m weathered grey/black shale 60.00m-90.00m hard blackshale/siltstone	1613m	West

NGIS Bore ID	Drillers Log	Distance	Direction
10084518	0.00m-1.00m soil with sand and clay 1.00m-6.00m clay, grey 6.00m-36.00m clay, with sand and gravel	1664m	West
10073898	0.00m-1.00m topsoil 1.00m-28.00m clay 28.00m-31.00m sand, and clay - water supply	1780m	South West
10101238	0.00m-0.50m Topsoil 0.50m-3.00m Sand Dry 3.00m-5.00m Clay Grey Sandy 5.00m-14.00m Clay Large Gravel 14.00m-17.50m Gravel Sand 17.50m-21.00m Clay Reddish Stones Large Bands 21.00m-24.00m Sand Dry Medium Clay Bands 24.00m-33.00m Clay Grey Yellow Sand Small Bands 33.00m-39.00m Clay White 39.00m-55.00m Clay White Yellow	1792m	West
10088096	0.00m-1.00m SOIL 1.00m-9.00m CLAYS - SOFT AND LARGE GRAVELLY SAND 9.00m-42.00m SHALES/QUARTZ/SILTSTONE - WEATHERED	1802m	South West
10047548	0.00m-0.10m TOPSOIL 0.10m-6.00m SANDY CLAYS 6.00m-30.00m SAND - FINE - COARSE	1869m	South West
10083344	0.00m-1.00m TOPSOIL 1.00m-50.00m YELLOW SHALE	1875m	South West
10137039	0.00m-2.44m Sand 2.44m-4.57m Clay Sandy 4.57m-6.10m Gravel 6.10m-7.62m Clay Sandy 7.62m-10.67m Clay 10.67m-16.76m Gravel 16.76m-19.81m Sand Water Bearing 19.81m-21.34m Clay 21.34m-22.86m Sand Water Bearing 22.86m-25.91m Clay 25.91m-47.24m Sand Coarse Water Bearing 47.24m-50.60m Clay 50.60m-52.43m Sand Coarse Siltstone	1882m	West
10021460	0.00m-2.50m RED/BR CLAY; BLACK AT TOP 2.50m-4.00m GRAVEL, 2-10 MM AV 5MM 4.00m-15.50m SANDSTONE, WH. KAOLINITIC, VERY FRACTURED, F.G-MG 15.50m-21.00m CLAYSTONE, WH-LT GREY 21.00m-33.00m SHALE, SOFT WH-LT GREY 33.00m-65.50m SANDSTONE, WH. KAOLINITIC TENDING SILTY; RED/BR AT TOP; F.G. M.G. 65.50m-73.00m SANDSTONE, OR/BR - PINK QTZ M-C.G	1887m	South West
10098951	0.00m-9.00m Clay, soil 9.00m-15.00m Silt, gravel 15.00m-22.00m Gravel, sand clay	1894m	South West
10106556	0.00m-0.80m Topsoil 0.80m-2.50m Clay White Gravel 2.50m-4.50m Clay Yellow White 4.50m-6.00m Clay Yellow Gravel 6.00m-7.00m Clay Gravel 7.00m-8.00m Clay White 8.00m-10.00m Clay Yellow Gravel 10.00m-18.00m Clay Reddish Gravel 18.00m-19.00m Clay White Sticky 19.00m-21.00m Clay Red White Sticky 21.00m-22.00m Clay Grey Yellow Sticky 22.00m-22.50m Sand Gravel Water Bearing Bands 22.50m-24.50m Clay Grey Yellow Sandy 24.50m-25.00m Sand Water Bearing Clay 25.00m-28.00m Clay White Sandy 28.00m-30.00m Clay White Sticky 30.00m-39.00m Sand Coarse 30.00m-39.00m Clay Yellow Water Bearing Bands 39.00m-41.00m Gravel Yellow Water Bearing Clay Bands 41.00m-42.00m Clay Grey 42.00m-47.00m Gravel Water Bearing Large Clay Bands 47.00m-49.50m Clay Yellow Grey 49.50m-50.50m Gravel Water Bearing Large 50.50m-51.00m Gravel Water Bearing Cemented Large 51.00m-52.00m Gravel Cemented Large 52.00m-55.50m Slate Black Hard 55.50m-55.51m Bedrock	1894m	West
10101517	0.00m-7.00m Clay, yellow brown 7.00m-22.50m Gravel, very coarse, quartzose, angular 22.50m-45.00m Siltstone, weathered with abundent quartz veins 45.00m-60.00m Siltstone, less weathered, fractured, light brown 60.00m-100.00m Siltstone, light grey, quartz veins	1906m	South West

NGIS Bore ID	Drillers Log	Distance	Direction
10100181	0.00m-7.50m Clay, and silt, interbedded (buff-it orange) 7.50m-15.00m Sand, coarse interbedded with gravel fine to coarse and clay, thin 15.00m-27.00m Clay, sand thin, gravel minor 27.00m-37.00m Sand, coarse interbedded, gravel fine, clay 37.00m-46.50m Gravel, coarse, quartz and red siltstone pebbles 46.50m-48.50m Clay 48.50m-49.50m Gravel, medium to coarse, white quartz 49.50m-84.00m Bedrock, deeply weathered with claystones	1930m	South West
10134904	0.00m-0.30m Topsoil 0.30m-5.80m Clay Coloured 5.80m-14.30m Shale Soft Water Supply 5.80m-14.30m Gravel Bands Water Supply 14.30m-24.40m Shale Water Supply	1988m	North
10133366	0.00m-3.05m Clay Sandy 3.05m-6.10m Gravel Sandy 6.10m-10.97m Clay 10.97m-11.58m Gravel Water Bearing 11.58m-16.76m Clay Large Gravel Seams 16.76m-18.29m Sand Coarse 18.29m-24.38m Clay Sandy 24.38m-32.00m Sand Firm 32.00m-33.53m Clay Sandy 33.53m-35.05m Clay 35.05m-38.10m Sand 38.10m-39.62m Sand Clay 39.62m-44.20m Sand Coarse 44.20m-64.01m Clay 44.20m-64.01m Or Weathered Rock 64.01m-74.98m Or Weathered Rock 64.01m-74.98m Clay Some Sand 74.98m-86.87m Clay 74.98m-86.87m Or Weathered Rock 86.87m-111.86m Or Weathered Rock 86.87m-111.86m Silt Sandy	1989m	West
10036417	0.00m-2.00m Clay, brown 2.00m-5.00m Shale, soft brown 5.00m-30.00m Shales/siltstone, grey 30.00m-132.00m Interbedded stiltstones, slates with quartz bands	1993m	East

Geology

Bridget Avenue, Bungendore, NSW 2621



Legend

Linear Geological Structures and Boundaries

Site Boundary	Trendline	Marker Bed	Miscellaneous Boundary
Report Buffer	Fold Axis	Faulted Boundary	Water/Coastline Boundary
Property Boundary	Geological Boundary	Shear Zone or Schist Zone Boundary	State/Territory Border

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 October 2024

Geology

Bridget Avenue, Bungendore, NSW 2621

Geological Units

Geological units within the dataset buffer:

Code	Unit Name	Description	Stratigraphy	Age Range	Dominant Lithology	Dist	Dir
Oada	Abercrombie Formation	Brown and buff to grey, thin- to thick-bedded, fine- to coarse-grained mica-quartz (±feldspar) sandstone, interbedded with laminated siltstone and mudstone. Sporadic chert-rich units.	/Adaminaby Group//Abercrombie Formation//	La2b (Lancefieldian) (base) to Da4 (Darriwilian) (top)	Sandstone	0m	On-site
Q_a	Alluvium	Unconsolidated grey to brown to beige humic (±)micaceous silty clay, quartz-(±)lithic silt, fine- to medium-grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravel (as sporadic lenses); sporadic palaeosol horizons.	/Alluvium////	Quaternary (base) to Now (top)	Clastic sediment	217m	South East
Q_c	Colluvium	Poorly sorted, weakly cemented to unconsolidated colluvial lenses of polymictic conglomerate with medium- to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand layers, modified by pedogenesis.	/Colluvium////	Quaternary (base) to Now (top)	Clastic sediment	232m	South
Q_r	Residual deposits	A weakly-consolidated regolithic residuum such as soil or saprolite mostly developed in-situ as a result of advanced weathering and/or pedogenesis.	/Residual deposits////	Quaternary (base) to Now (top)	Saprolite	493m	North
GN_aa	Alluvial sediments	Alluvial deposits, dominantly sand & gravel; friable to unconsolidated, or cemented to sandstone or conglomerate. Massive to bedded, ranging from thin to very thick; horizontal to cross bedded. Includes some lacustrine deposits & sub-basaltic sediments.	/Alluvium//Alluvial sediments//	Paleogene (base) to Pleistocene (top)	Clastic sediment	569m	South East
Q_hd	Quarries	Ground disturbed and/or excavated by quarrying including sand quarrying.	/Anthropogenic deposits//Quarries//	Quaternary (base) to Pleistocene (top)	Anthropogenic material	942m	West

Geology

Bridget Avenue, Bungendore, NSW 2621

Linear Geological Structures

Fault and shear or schist zone boundaries within the dataset buffer:

Map ID	Boundary Type	Feature Description	Fault Dip Angle	Fault Dip Direction	Dist	Dir
59813	Faulted boundary	Thrust-fault, inferred	Steep	West	129m	East
61158	Faulted boundary	Thrust-fault, inferred	Steep	West	576m	South East

Trendlines within the dataset buffer:

Map ID	Feature Description	Observation Method	Structure Name	Dist	Dir
NA	No records in buffer				

Fold axes within the dataset buffer:

Map ID	Feature Description	Observation Method	Structure Name	Dist	Dir
NA	No records in buffer				

Marker beds within the dataset buffer:

Map ID	Feature Description	Rock Unit Description	Dist	Dir
NA	No records in buffer			

Naturally Occurring Asbestos Potential

Bridget Avenue, Bungendore, NSW 2621

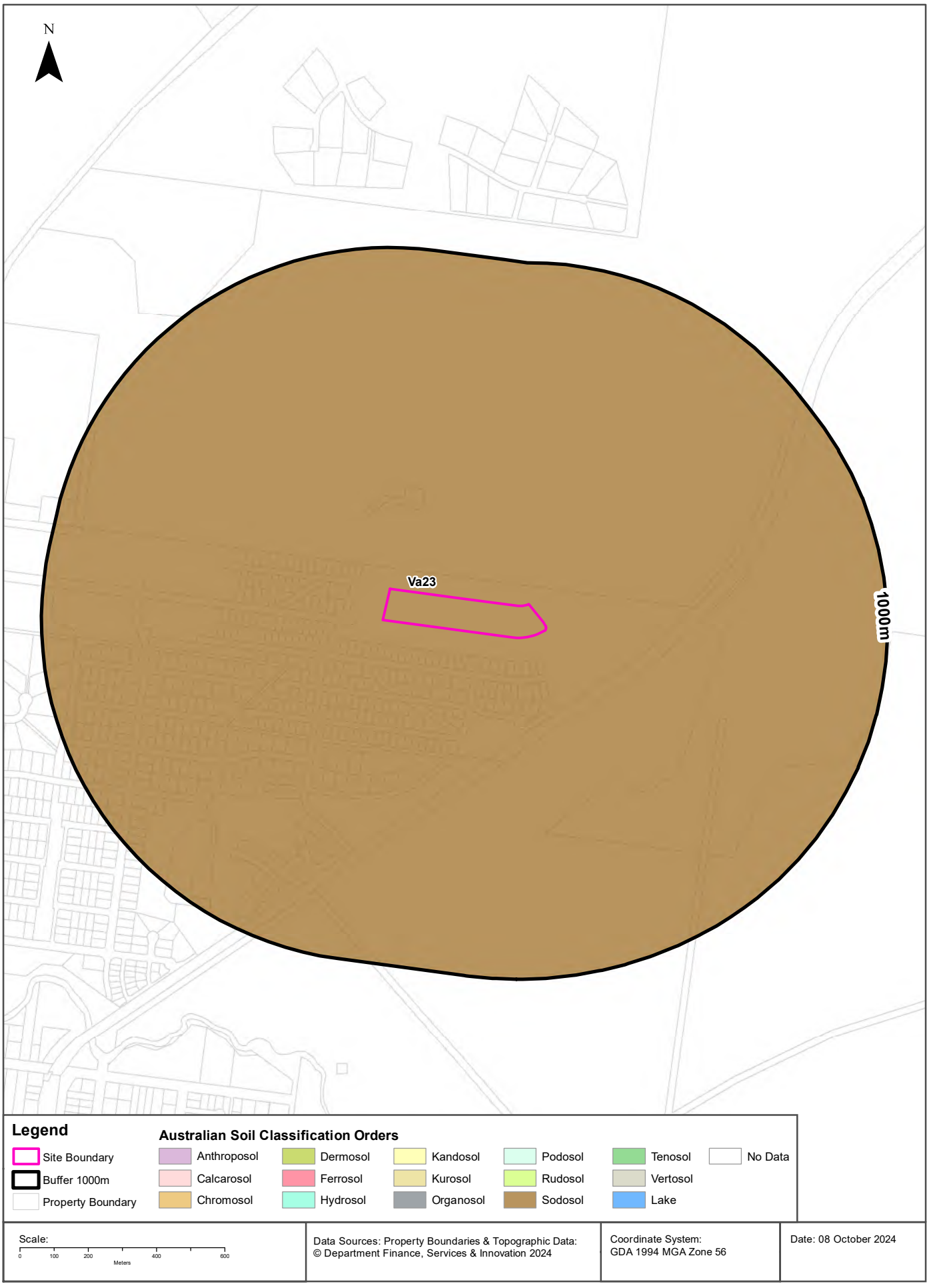
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Atlas of Australian Soils

Bridget Avenue, Bungendore, NSW 2621



Soils

Bridget Avenue, Bungendore, NSW 2621

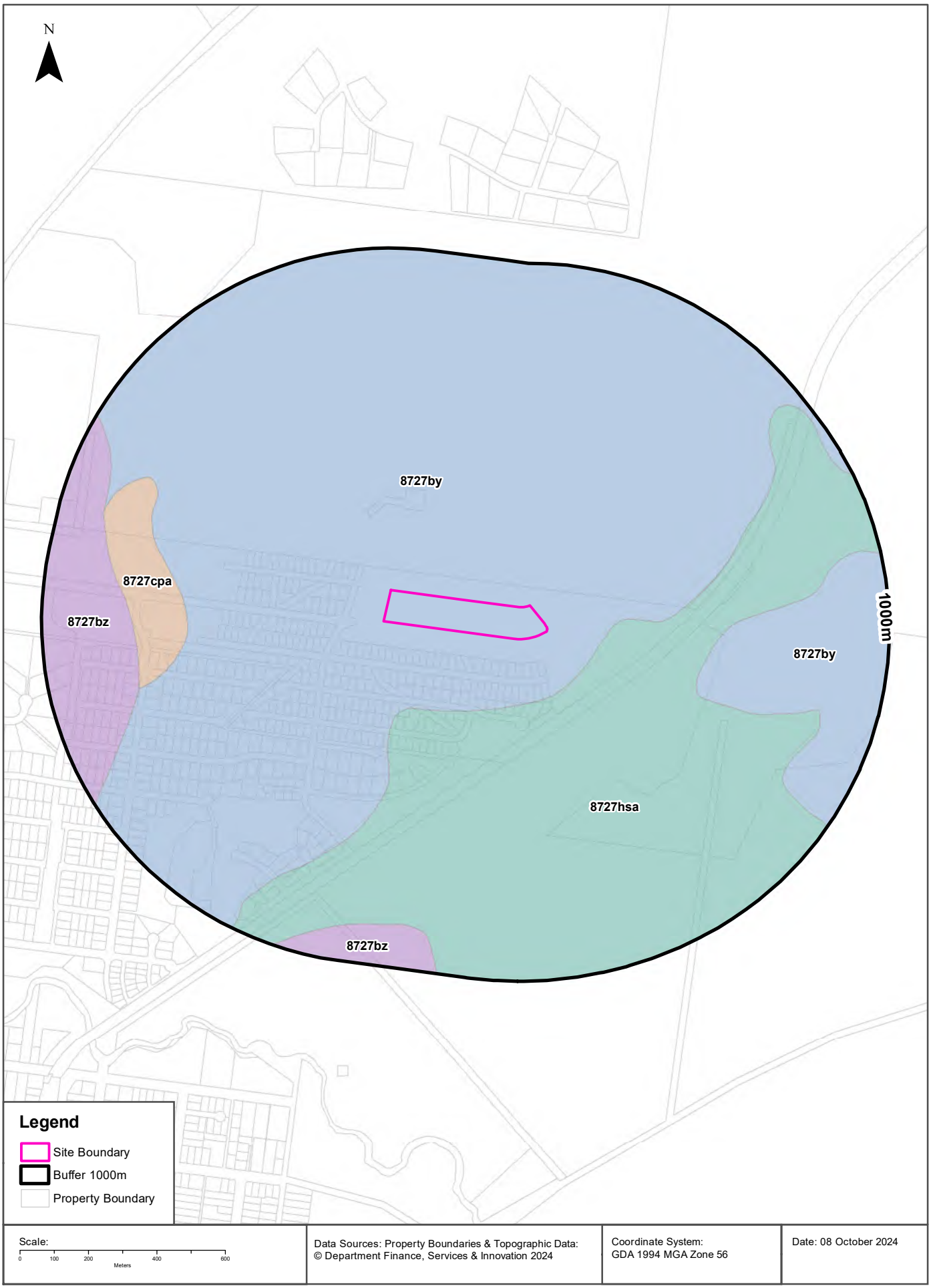
Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Va23	Sodosol	Basin plains at moderate elevations (> 2000 ft) with lakes, swamps, lunettes, small stream valleys, and low residual hills and ridges; some buried layered soil materials: basin plains of hard alkaline and neutral yellow mottled soils (Dy3.43 and Dy3.42) with other undescribed soils. Associated are (i) lunettes and/or levee-like ridges of red earths (Gn2.15) and possibly some sand sheets of (Uc) soils; (ii) narrow depressions of (Dd1.43) soils; (iii) ?old terrace remnants of (Dr2.41) soils above which some gravel fills may occur; and (iv) broken by some undulating to low hilly areas of (Dy3.42) soils with (Gn2.25 and Gn2.75) soils.	0m	On-site

Soil Landscapes of Central and Eastern NSW

Bridget Avenue, Bungendore, NSW 2621



Soils

Bridget Avenue, Bungendore, NSW 2621

Soil Landscapes of Central and Eastern NSW

Soil Landscapes of Central and Eastern NSW within the dataset buffer:

Soil Code	Name	Distance	Direction
8727by	Bywong	0m	On-site
8727hsa	Hoskinstown variant a	150m	South East
8727cpa	Coopers variant a	573m	West
8727bz	Bungendore	726m	West

Acid Sulfate Soils

Bridget Avenue, Bungendore, NSW 2621

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

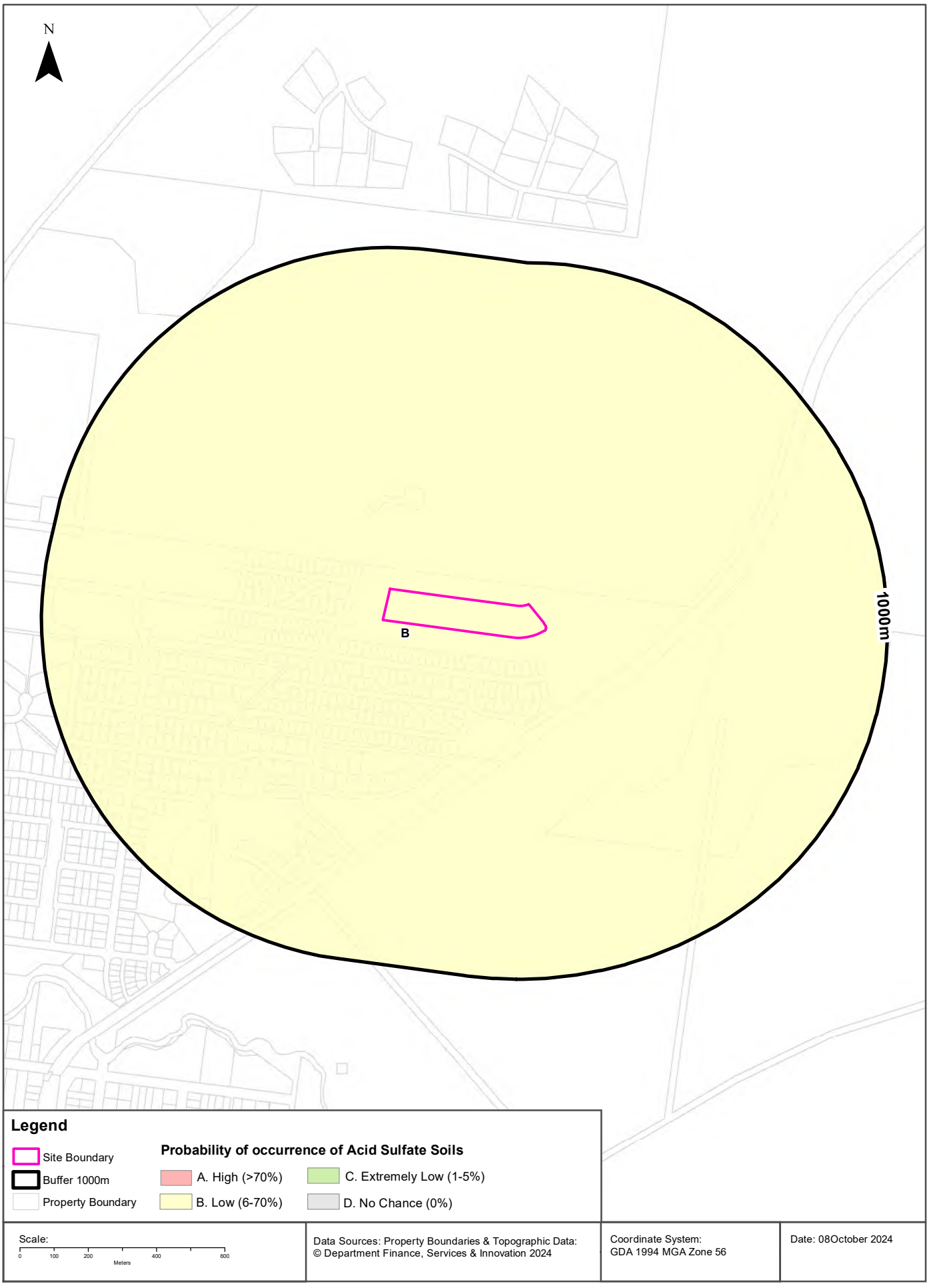
Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

Bridget Avenue, Bungendore, NSW 2621



Acid Sulfate Soils

Bridget Avenue, Bungendore, NSW 2621

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance	Direction
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m	On-site

Dryland Salinity

Bridget Avenue, Bungendore, NSW 2621

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A		

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining

Bridget Avenue, Bungendore, NSW 2621

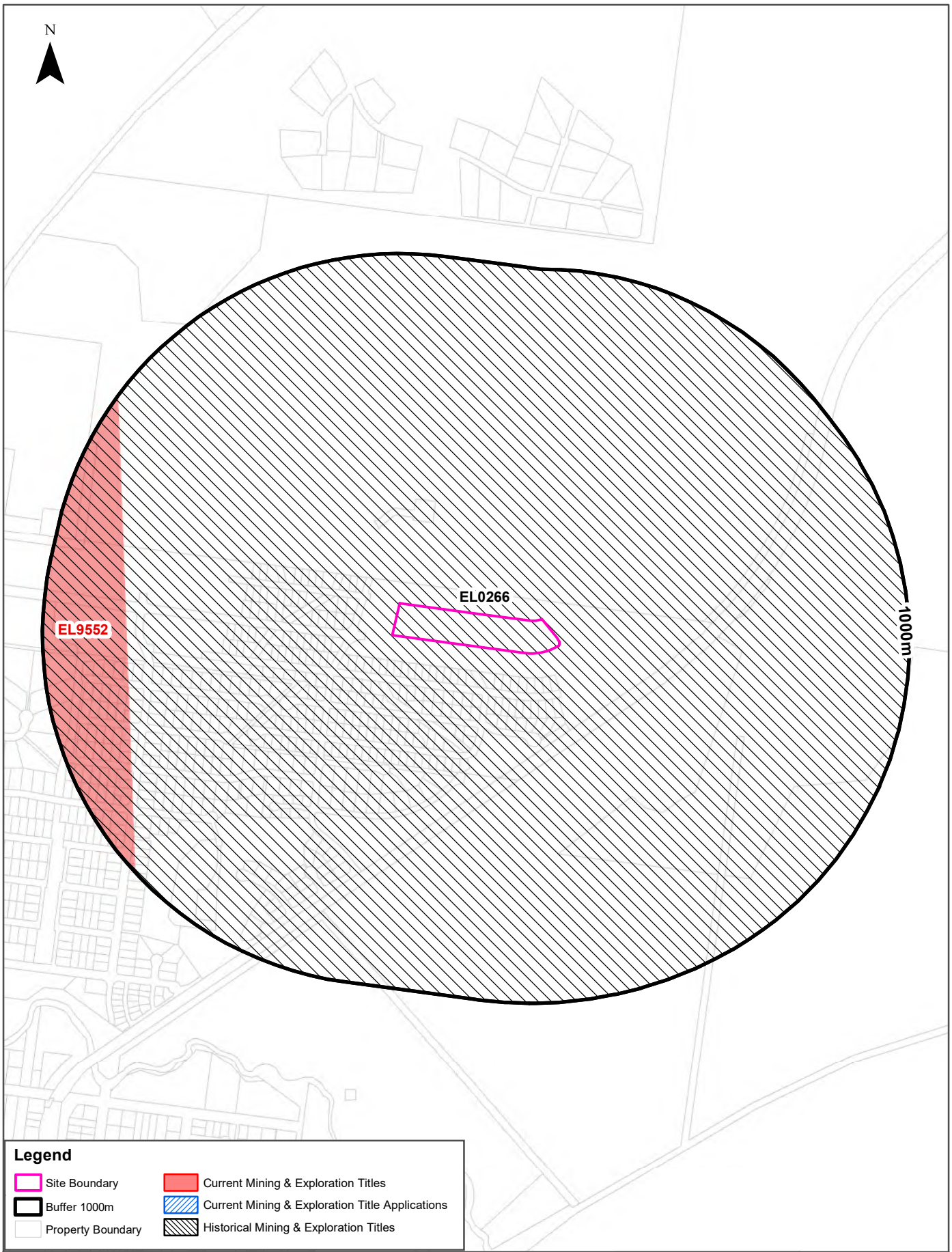
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining & Exploration Titles

Bridget Avenue, Bungendore, NSW 2621



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2024

Coordinate System:
GDA 1994 MGA Zone 56

Date: 08 October 2024

Mining

Bridget Avenue, Bungendore, NSW 2621

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
EL9552	CHARLIES RUN PTY LTD	12/04/2023	12/04/2029	20230412	EXPLORING	MINERALS	Group 1	761m	West

Current Mining & Exploration Titles Data Source: © State of New South Wales through NSW Department of Industry

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer						

Current Mining & Exploration Title Applications Data Source: © State of New South Wales through NSW Department of Industry

Mining

Bridget Avenue, Bungendore, NSW 2621

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL0266	JODODEX AUSTRALIA PTY LIMITED	19700301	19720301	MINERALS	Cu Pb Zn Ni	0m	On-site

State Environmental Planning Policy

Bridget Avenue, Bungendore, NSW 2621

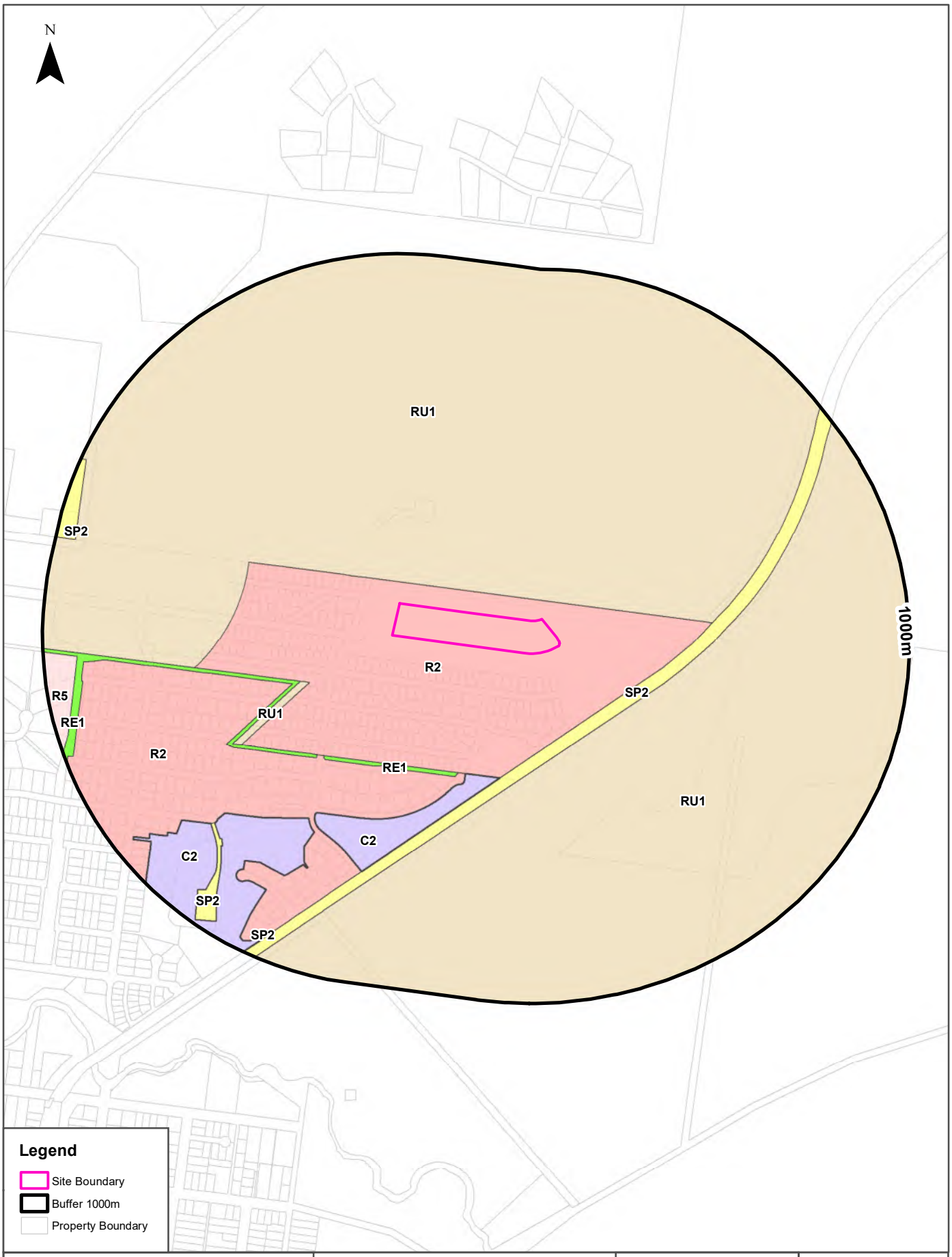
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No records in buffer							

EPI Planning Zones

Bridget Avenue, Bungendore, NSW 2621



Environmental Planning Instrument

Bridget Avenue, Bungendore, NSW 2621

Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	0m	On-site
RU1	Primary Production		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	54m	North
SP2	Infrastructure	Rail Infrastucture Facility	Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	217m	South East
RU1	Primary Production		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	255m	South East
RU1	Primary Production		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	274m	West
RE1	Public Recreation		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	295m	West
R2	Low Density Residential		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	319m	South West
C2	Environmental Conservation		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	363m	South West
RE1	Public Recreation		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	364m	South West
C2	Environmental Conservation		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	575m	South West
SP2	Infrastructure	Water Supply System	Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	738m	South West
R5	Large Lot Residential		Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	903m	West
SP2	Infrastructure	Sewerage System	Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	920m	South West
SP2	Infrastructure	Waste or Resource Management Facility	Queanbeyan-Palerang Regional Local Environmental Plan 2022	21/04/2023	26/04/2023	21/07/2023	Map Amendment No 2	945m	West

Heritage Items

Bridget Avenue, Bungendore, NSW 2621

Heritage

Bridget Avenue, Bungendore, NSW 2621

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

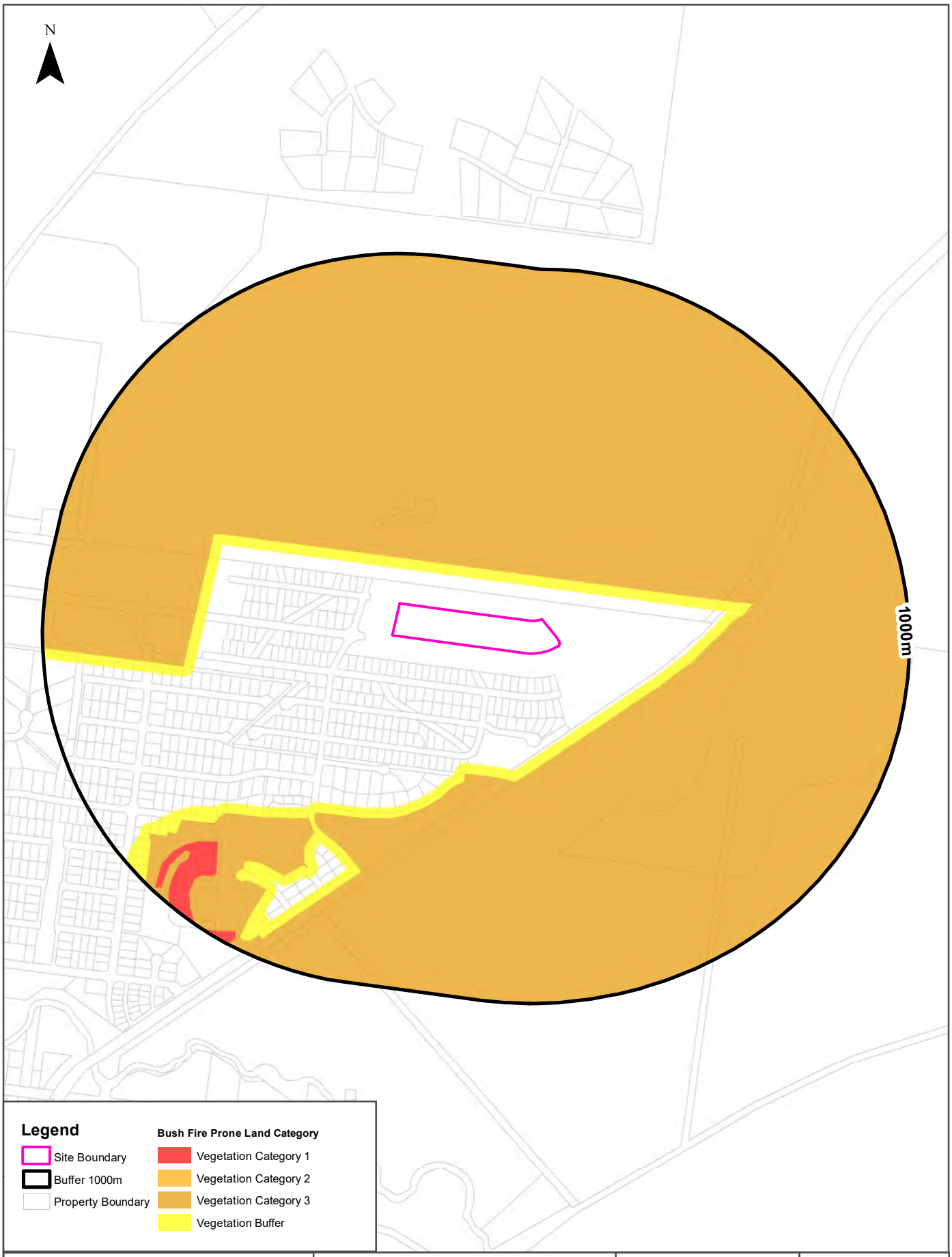
Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I228	Mingarry	Item - General	Local	Queanbeyan-Palerang Regional Local Environmental Plan 2022	07/10/2022	14/11/2022	14/11/2022	996m	North West

Natural Hazards - Bush Fire Prone Land

Bridget Avenue, Bungendore, NSW 2621



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2024. Property Boundaries: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 October 2024

Natural Hazards

Bridget Avenue, Bungendore, NSW 2621

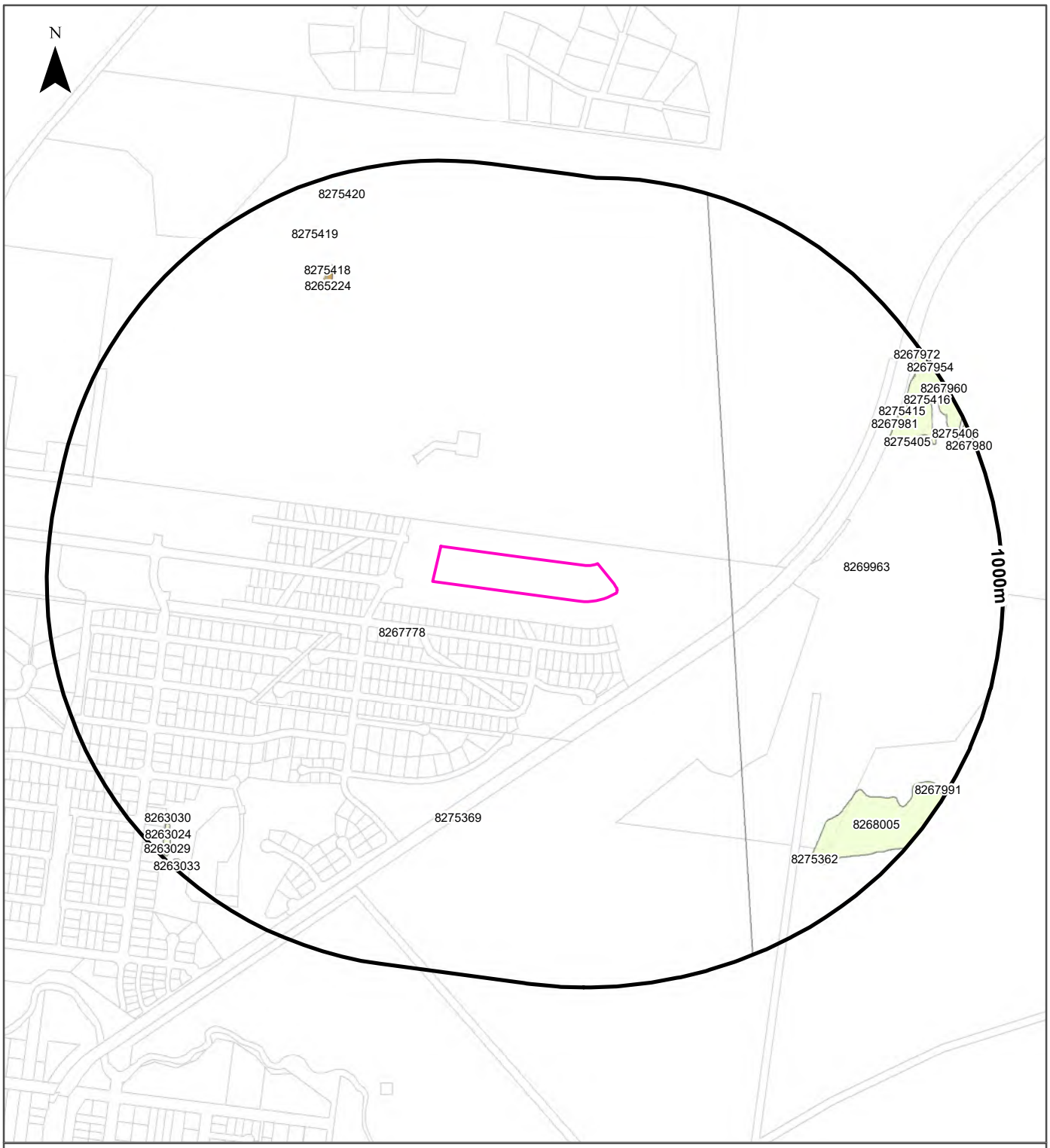
Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	91m	South West
Vegetation Category 3	121m	North East
Vegetation Category 1	773m	South West

Ecological Constraints - Vegetation & Ramsar Wetlands

Bridget Avenue, Bungendore, NSW 2621



- Site Boundary
- ReportBuffer
- Property Boundary
- Ramsar Wetland

Native Vegetation

- Alpine Complex
- Arid Shrublands (Acacia sub-formation)
- Arid Shrublands (Chenopod sub-formation)
- Dry Sclerophyll Forests (Shrub/grass sub-formation)
- Dry Sclerophyll Forests (Shrubby sub-formation)
- Forested Wetlands
- Freshwater Wetlands
- Grasslands
- Grassy Woodlands
- Heathlands
- Rainforests
- Saline Wetlands
- Semi-arid Woodlands (Grassy sub-formation)
- Semi-arid Woodlands (Shrubby sub-formation)
- Wet Sclerophyll Forests (Grassy sub-formation)
- Wet Sclerophyll Forests (Shrubby sub-formation)
- Non vegetated
- Unattributed
- Not classified
- Other

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2024

Coordinate System: GDA 1994 MGA Zone 56

Date: 08 October 2024

Ecological Constraints

Bridget Avenue, Bungendore, NSW 2621

Native Vegetation

What native vegetation exists within the dataset buffer?

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
8267778	Not classified	(Not classified) Not classified	Not classified	0m	On-site
8269963	Not classified	(Not classified) Not classified	Not classified	292m	East
8275369	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	586m	South
8265224	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	730m	North West
8275417	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	749m	North West
8275418	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	773m	North West
8267981	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	800m	North East
8268005	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	803m	South East
8275405	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	843m	East
8275362	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	854m	South East
8275407	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	854m	East
8275419	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	861m	North West
8275415	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	864m	North East
8263026	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	910m	South West
8275410	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	912m	East
8263031	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	913m	South West
8263030	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	917m	South West
8263025	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	929m	South West
8263029	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	929m	South West
8275414	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	934m	East
8267970	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	936m	North East
8275420	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	936m	North West
8275416	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	940m	North East
8263024	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	941m	South West
8263023	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	952m	South West
8275411	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	953m	East
8267971	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	956m	North East
8275413	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	956m	East

Map ID	Vegetation Formation	Plant Community Type and Vegetation Formation	Vegetation Class	Dist	Dir
8275406	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	959m	East
8275367	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	963m	South West
8267992	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	964m	South East
8267991	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	971m	South East
8267972	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	974m	North East
8267980	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	975m	East
8263033	Grasslands	(Grasslands) Southern Tableland Red Grass-Spear Grass Grassland	Temperate Montane Grasslands	976m	South West
8263027	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	978m	South West
8275371	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	982m	South East
8267954	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	990m	North East
8267960	Grassy Woodlands	(Grassy Woodlands) Central Tableland Red Stringybark Grassy Forest	Southern Tableland Grassy Woodlands	990m	North East
8267973	Grassy Woodlands	(Grassy Woodlands) Southern Tableland Grassy Box Woodland	Southern Tableland Grassy Woodlands	995m	North East
8267955	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	997m	North East
8275370	Grassy Woodlands	(Grassy Woodlands) Goulburn Tableland Frost Hollow Grassy Woodland	Tableland Clay Grassy Woodlands	998m	South East
8267963	Grassy Woodlands	(Grassy Woodlands) Central Tableland Red Stringybark Grassy Forest	Southern Tableland Grassy Woodlands	999m	North East

Ecological Constraints

Bridget Avenue, Bungendore, NSW 2621

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map ID	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Agriculture, Water and the Environment

Ecological Constraints

Bridget Avenue, Bungendore, NSW 2621

Collaborative Australian Protected Areas Database - Terrestrial

Protected areas in terrestrial environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Collaborative Australian Protected Areas Database - Marine

Protected areas in marine environments identified by the CAPAD within the dataset buffer:

Map ID	Area Name	Area Details	Management Category	Authority	Jurisdiction	Dist	Dir
N/A	No records in buffer						

Source: Collaborative Australian Protected Areas Database (CAPAD) 2022

Ecological Constraints

Bridget Avenue, Bungendore, NSW 2621

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Bridget Avenue, Bungendore, NSW 2621

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
N/A	No records in buffer					

Ecological Constraints

Bridget Avenue, Bungendore, NSW 2621

NSW BioNet Species Sightings

Species sightings from the NSW BioNet Repository that have either a state or federal conservation status, or a sensitivity status, and are within 10 km of the site:
Note: This data does not include NSW Category 1 sensitive species.

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Amphibia	Litoria castanea	Yellow-spotted Tree Frog	Not Sensitive	Critically Endangered	Critically Endangered	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Category 2	Critically Endangered	Critically Endangered	
Animalia	Aves	Aphelocephala leucopsis	Southern Whiteface	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Botaurus poiciloptilus	Australasian Bittern	Not Sensitive	Endangered	Endangered	
Animalia	Aves	Calidris acuminata	Sharp-tailed Sandpiper	Not Sensitive	Not Listed	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Callocephalon fimbriatum	Gang-gang Cockatoo	Category 3	Endangered	Endangered	
Animalia	Aves	Calyptorhynchus lathami lathami	South-eastern Glossy Black-Cockatoo	Category 2	Vulnerable	Vulnerable	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Gallinago hardwickii	Latham's Snipe	Not Sensitive	Vulnerable	Vulnerable	ROKAMBA;JAMBA
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Sensitive	Vulnerable	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Not Sensitive	Endangered	Critically Endangered	
Animalia	Aves	Pachycephala olivacea	Olive Whistler	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Not Sensitive	Vulnerable	Not Listed	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Category 3	Vulnerable	Vulnerable	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Not Sensitive	Endangered	Endangered	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Not Sensitive	Vulnerable	Not Listed	
Animalia	Insecta	Keyacris scurra	Key's Matchstick Grasshopper	Not Sensitive	Endangered	Endangered	

Kingdom	Class	Scientific	Common	Sensitivity Class	State Conservation Status	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Macropus dorsalis	Black-striped Wallaby	Not Sensitive	Endangered	Not Listed	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Not Sensitive	Vulnerable	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Not Sensitive	Endangered	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Not Sensitive	Vulnerable	Vulnerable	
Animalia	Reptilia	Caretta caretta	Loggerhead Turtle	Not Sensitive	Endangered	Endangered	
Animalia	Reptilia	Suta flagellum	Little Whip Snake	Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Calotis glandulosa	Mauve Burr-daisy	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Diuris aequalis	Buttercup Doubletail	Category 2	Endangered	Endangered	
Plantae	Flora	Eucalyptus aggregata	Black Gum	Not Sensitive	Vulnerable	Vulnerable	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Not Sensitive	Vulnerable	Not Listed	
Plantae	Flora	Eucalyptus macarthurii	Paddys River Box, Camden Woollybutt	Not Sensitive	Endangered	Endangered	
Plantae	Flora	Lepidium hyssopifolium	Aromatic Peppercress	Not Sensitive	Endangered	Endangered	
Plantae	Flora	Leucochrysum albicans subsp. tricolor	Hoary Sunray	Not Sensitive	Endangered	Endangered	
Plantae	Flora	Senecio macrocarpus		Not Sensitive	Not Listed	Vulnerable	
Plantae	Flora	Swainsona recta	Small Purple-pea	Not Sensitive	Endangered	Endangered	
Plantae	Flora	Wilsonia rotundifolia	Round-leafed Wilsonia	Not Sensitive	Endangered	Not Listed	

Source: NSW BioNet Species Sightings

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise Match	Georeferenced to the site location / premise or part of site
Area Match	Georeferenced to an approximate or general area
Road Match	Georeferenced to a road or rail corridor
Road Intersection	Georeferenced to a road intersection
Buffered Point	A point feature buffered to x metres
Adjacent Match	Land adjacent to a georeferenced feature
Network of Features	Georeferenced to a network of features
Suburb Match	Georeferenced to a suburb boundary
As Supplied	Spatial data supplied by provider

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Land Title Records

ABN: 36 092 724 251
Ph: 02 9099 7400
(Ph: 0412 199 304)

Level 14, 135 King Street, Sydney
Sydney 2000
GPO Box 4103 Sydney NSW 2001
DX 967 Sydney

Summary of Owners Report

Re: - Bridget Avenue, Bungendore, NSW

Description: - Lot 125 D.P. 1297613

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
16.04.1913 (1913 to 1968)	Francis George Leahy (Grazier) (& his deceased estate)	Book 997 No. 84
06.06.1968 (1968 to 1971)	Trustees of the Christian Brothers	Book 2923 No. 563
07.09.1971 (1971 to 1985)	Elmslea Pty Limited	Book 3024 No. 196
29.07.1985 (1985 to 1988)	J.D Kilmartin Pty Limited	Book 3637 No. 686 (Book 3685 No. 766, Re-registration)
03.11.1988 (1988 to 2004)	Gregory Arthur Brown (Livestock Broker) Sylvia Joan Brown (Married Woman)	Book 3754 No. 706 Now 1/798111
09.11.2004 (2004 to Date)	# Elmslea Land Developments Pty Limited	1/798111 Then 105/1282739 Now 125/1297613

# Denotes Current Registered Proprietor

Leases: - NIL

Easements: -

- 13.07.2011 (D.P. 1166892) Easement for Water Supply 4 metres wide.
- 12.09.2023 (D.P. 1297613) Easement for Asset Protection Zone 50 metres wide and variable.

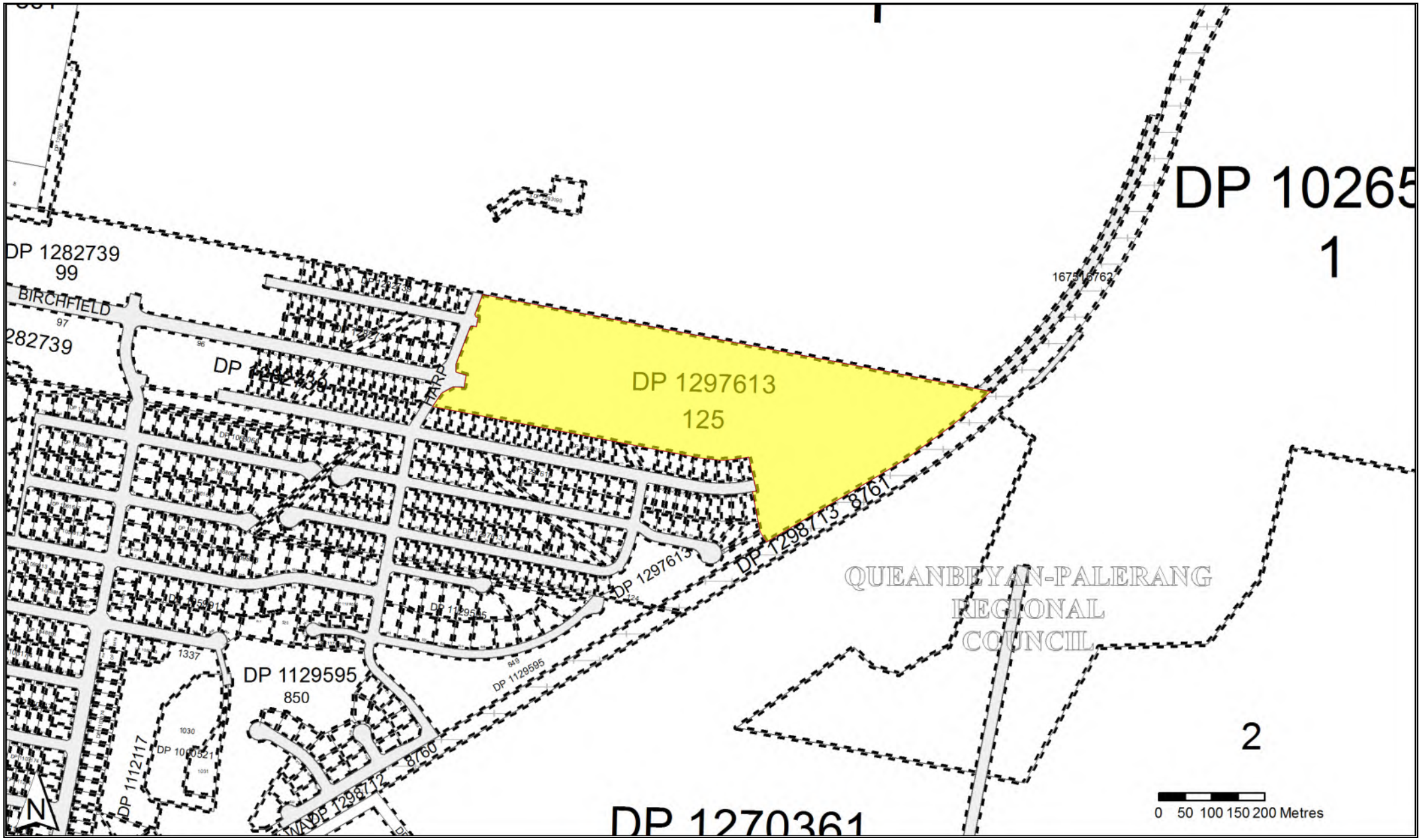
Yours Sincerely
Mark Groll
22 October 2024

LAND REGISTRY SERVICES

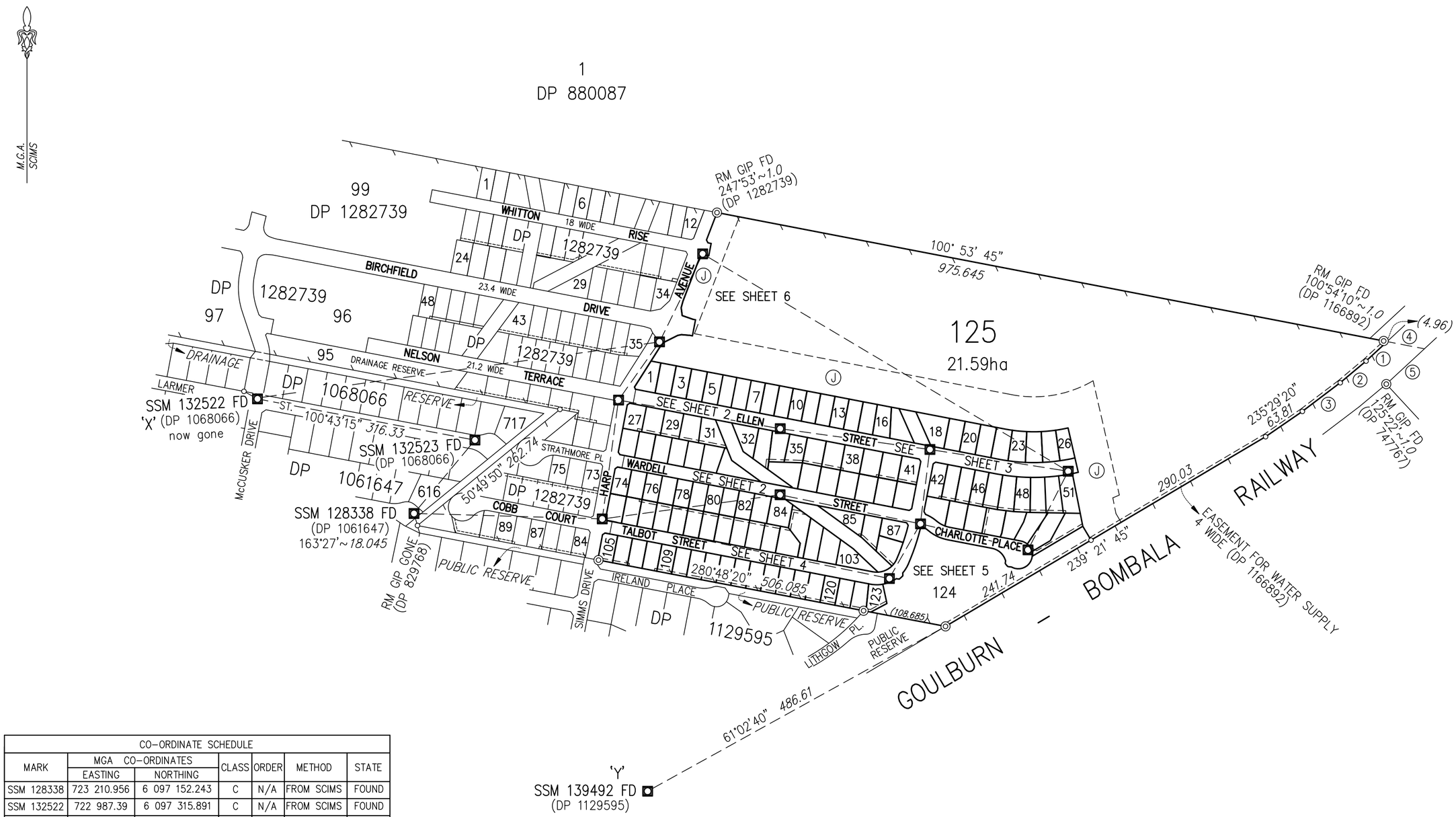
Cadastral Records Enquiry Report : Lot 125 DP 1297613

Ref : Bridget Avenue, Bungendore, NSW

Locality : BUNGENDORE
Parish : CURRANDOOLY
LGA : QUEANBEYAN-PALERANG REGIONAL
County : MURRAY



This information is provided as a searching aid only.Whilst every endeavour is made to ensure that current map, plan and titling information is accurately reflected, the Registrar General cannot guarantee the information provided. For ALL ACTIVITY PRIOR TO SEPTEMBER 2002 you must refer to the RGs Charting and Reference Maps



CO-ORDINATE SCHEDULE						
MARK	MGA CO-ORDINATES		CLASS	ORDER	METHOD	STATE
	EASTING	NORTHING				
SSM 128338	723 210.956	6 097 152.243	C	N/A	FROM SCIMS	FOUND
SSM 132522	722 987.39	6 097 315.891	C	N/A	FROM SCIMS	FOUND
SSM 132523	723 298.235	6 097 257.039	C	N/A	FROM SCIMS	FOUND
SSM 139492	723 545.165	6 096 755.241	C	N/A	FROM SCIMS	FOUND
SSM 144629	723 562	6 097 397	U	U	FROM SCIMS	FOUND
SSM 144630	723 504	6 097 314	U	U	FROM SCIMS	FOUND
SSM 144631	723 480	6 097 144	U	U	FROM SCIMS	FOUND
SSM 221883	723 890.715	6 097 059.21			SURVEY	PLACED
SSM 221884	723 935.11	6 097 137.385			SURVEY	PLACED
SSM 221885	723 734.34	6 097 178.875			SURVEY	PLACED
SSM 221886	723 734.565	6 097 273.34			SURVEY	PLACED
SSM 221887	723 948.635	6 097 243.565			SURVEY	PLACED
PM 217810	723 623.81	6 097 523.08			SURVEY	PLACED
PM 217811	724 146.22	6 097 212.49			SURVEY	PLACED
PM 217812	724 088.79	6 097 100.13			SURVEY	PLACED

DATE OF SCIMS CO-ORDINATES: 1-05-23 ZONE: 55
MGA DATUM: GDA2020 COMBINED SCALE FACTOR: 1.000099

Ⓙ DENOTES EASEMENT FOR ASSET PROTECTION ZONE 50 WIDE & VARIABLE

DATUM LINE 'X' – 'Y'

SSM 132522 – SSM 139492

135°08'50" MGA ADOPTED
790.77 MGA GROUND
790.77 BY ME

SSM 132523 – SSM 128338

219°47'20" *136.37* BY ME & MGA

SSM 132522 – SSM 144629

81°56'30" *580.365* BY ME & MGA

SHORT BOUNDARY TABLE

No.	BEARING	DISTANCE
1	227°12'10"	*40.965*
2	230°02'50"	*48.09*
3	232°51'20"	*67.935*
4	280°54'10"	*49.29*
5	46°47'10"	*71*

Surveyor: MATTHEW BRUCE SMITH
Date of Survey: 10 MAY 2023
Surveyor's Ref: 15792 – 2AL

PLAN OF SUBDIVISION OF PT LOT 105 DP 1282739

L.G.A.: QUEANBEYAN–PALERANG REGIONAL
Locality: BUNGENDORE
Subdivision No: SC.2023.0020
Lengths are in metres Reduction Ratio 1:4000

Registered
12/09/2023

DP 1297613

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

SHORT BOUNDARY TABLE

No.	BEARING	DISTANCE
17	192°57'30"	2.005 RW
18	336°41'10"	3.375
19	199°34'20"	0.915 RW
20	10°47'15"	2.095 RW

M.G.A. SCIMS

DP 1282739: 35, 36, 37, 60, 61, 62, 63, 72, 73, 74

AVENUE — 212° 28' 20" — 215° 09' 30" 101.605 PO & BY ME — (0.845)RW — 32° 28' 20" — 44.10 — 22.54 — 243°28' 22.53 — 218°29' 9.64 — 96°00' 9.06 — SSM 144629 FD (DP 1282739)

SEE SHEET 6

125 — 21.59ha

NELSON TERRACE — 100°54' 20.075 — 26°43'30" 4.805 — 21.41 — 18°56'10" — (4.02) — (2.28)RW — RW — SSM 144630 FD (DP 1282739) — (2.86)RW — (8.23) — 118°44'30" 14.205 — 55°50'40" 4.24 — RM DH&W's FD (DP1282739) 90°04' ~ 8.59 38°49' ~ 16.07

RM DH&W's IN KB 7°08" ~ 4.905 8°35'30" ~ 16.23

Lot	Area	Bearing	Distance
1	1000m²	190°52'15"	43.81
2	981m²	190°52'15"	43.82
3	987m²	190°52'15"	43.83
4	1000m²	190° 54'	43.845
5	1001m²	190° 54'	43.855
126	875m²	DRAINAGE RESERVE 19.95 WIDE	
6	926m²	190° 54'	43.865
7	901m²	190°52'15"	43.88
8	902m²	190°52'15"	43.89
9	878m²	190°52'15"	43.90
10	878m²	190°52'15"	43.91
11	878m²	190°52'15"	43.92
12	913m²	190°52'15"	43.93
13	901m²	190°52'15"	43.94
14	901m²	190°52'15"	43.955
15		190°52'15"	43.965

ELLEN STREET — 280°01'15" 234.58 — 100° 54' 39.425 — 254°43'25" 11.255 — SSM 221886 — 21.20 WIDE — 277°55'10" 216.13 — to SSM 221887 — SHEET 3

RM DH&W's IN KB 10°59'15" ~ 4.915 9°35'30" ~ 16.23

Lot	Area	Bearing	Distance
27	1005m²	191°01'20"	36.905
28	1001m²	190°52'10"	36.905
29	1001m²	191°15'50"	36.905
30	1008m²	187°16'30"	36.975
31	1132m²	158° 12' 20"	43.845
32	1077m²	190°54'10"	44.41
33	1079m²	187° 10'	44.605
34	1002m²	11°40'20"	41.06
35	1005m²	190° 54'	36.895
36	1018m²	190° 54'	36.895
37	1018m²	190° 54'	36.895
38	1018m²	190° 54'	36.895
39			

DRAINAGE RESERVE 3.38 WIDE — 44.095

HARP STREET — 10° 47' 15" — 190° 47' 15" — 18 WIDE — 33.905 — 34.95 — 145°22'40" 4.195 — 21.265 — (6.44) — 187°47'50" 171.425 PO & BY ME — (6.39) — 190°52'15" 18.00 — 23°50'40" 4.255 — 20.605 — to SSM 144631 — 35.99

RM DH&W's FD IN KB 68°36' ~ 8.84 41°55' ~ 15.465 (DP1282739)

RM DH&W's IN KB 44°52' ~ 6.02 25°42' ~ 13.565

Lot	Area	Bearing	Distance
52	916m²	190° 54'	37.895
53	902m²	190° 54'	37.895
54	901m²	190° 54'	37.90
55	900m²	190° 54'	37.90
56	900m²	190° 54'	37.90
57	1001m²	198°56'20"	38.275
58	1035m²		
59	1212m²	190° 54'	37.905
60	1046m²	190° 54'	37.905
61	1046m²	190° 54'	37.905
62	1046m²	190° 54'	37.905
63			

RESERVE 19.95 WIDE — 125° 59' 15" 52.05 — 305° 59' 15" — 186°57' 11.005 — 271° 50' 20" 48.36 — 26.13 — 17.23 — 2.875 — 18.815 — 29.11 — 41.37 — 280° 54' — 65.53 — 280° 54' — 42.99 — 44.74 — 1.08 — 8.06 — 59°37'45" 19.765 — SSM 221885 — 24.435 — 20.00 — 130°23'50" 10.075 — 46.895 — 281°40'35" 205.015 — to SSM 221884 — SEE SHEET 4

Lot	Area	Bearing	Distance
74		190° 47' 15"	35.99
75		100° 54'	22.40
76		100° 54'	22.40
77		100° 54'	22.40
78		100° 54'	22.40
79		100° 54'	22.40
80		100° 54'	22.40
81		100° 54'	22.40
82		100° 54'	22.40
83			
84			
100			
128		DRAINAGE RESERVE	
85			

WARDELL STREET — to SSM 144631 262°15'10" 256.375

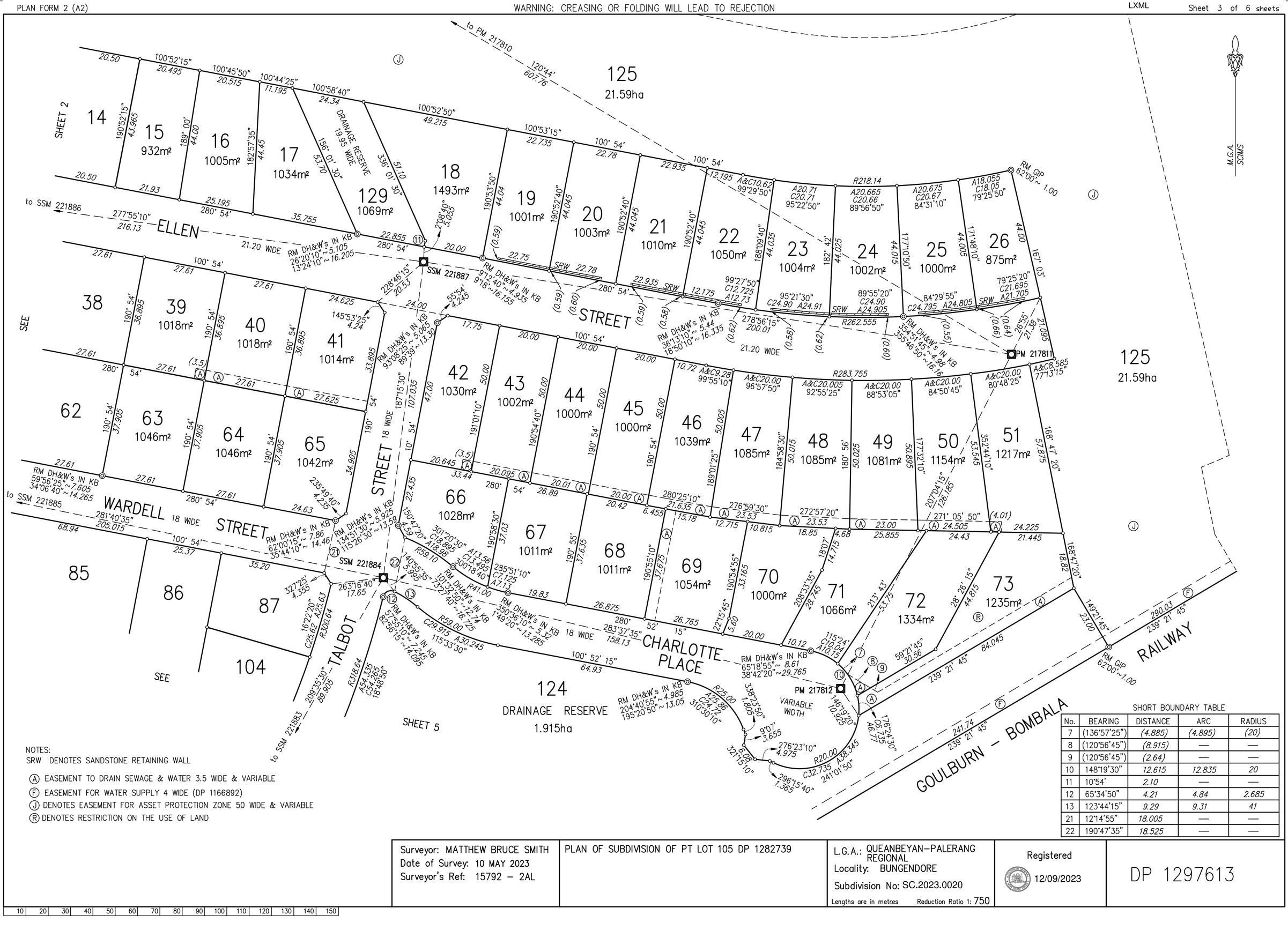
RM DH&W's IN KB 60°04'10" ~ 7.645 34°16' ~ 14.26

RM DH&W's IN KB 59°56'25" ~ 7.605 34°06'40" ~ 14.265

Ⓐ EASEMENT TO DRAIN SEWAGE & WATER 3.5 WIDE & VARIABLE
Ⓗ EASEMENT FOR MULTI PURPOSE ELECTRICAL INSTALLATION 4.2 WIDE
Ⓙ DENOTES EASEMENT FOR ASSET PROTECTION ZONE 50 WIDE & VARIABLE
RW DENOTES ROAD WIDENING

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Surveyor: MATTHEW BRUCE SMITH Date of Survey: 10 MAY 2023 Surveyor's Ref: 15792 – 2AL	PLAN OF SUBDIVISION OF PT LOT 105 DP 1282739	L.G.A.: QUEANBEYAN–PALERANG REGIONAL Locality: BUNGENDORE Subdivision No: SC.2023.0020 Lengths are in metres Reduction Ratio 1: 750	Registered 12/09/2023	DP 1297613



NOTES:
SRW DENOTES SANDSTONE RETAINING WALL

- (A) EASEMENT TO DRAIN SEWAGE & WATER 3.5 WIDE & VARIABLE
- (F) EASEMENT FOR WATER SUPPLY 4 WIDE (DP 1166892)
- (J) DENOTES EASEMENT FOR ASSET PROTECTION ZONE 50 WIDE & VARIABLE
- (R) DENOTES RESTRICTION ON THE USE OF LAND

SHORT BOUNDARY TABLE

No.	BEARING	DISTANCE	ARC	RADIUS
7	(136°57'25")	(4.885)	(4.895)	(20)
8	(120°56'45")	(8.915)	—	—
9	(120°56'45")	(2.64)	—	—
10	148°19'30"	12.615	12.835	20
11	10°54'	2.10	—	—
12	65°34'50"	4.21	4.84	2.685
13	123°44'15"	9.29	9.31	41
21	12°14'55"	18.005	—	—
22	190°47'35"	18.525	—	—

Surveyor: MATTHEW BRUCE SMITH Date of Survey: 10 MAY 2023 Surveyor's Ref: 15792 – 2AL	PLAN OF SUBDIVISION OF PT LOT 105 DP 1282739	L.G.A.: QUEANBEYAN–PALERANG REGIONAL Locality: BUNGENDORE Subdivision No: SC.2023.0020 Lengths are in metres Reduction Ratio 1: 750	Registered 12/09/2023	DP 1297613

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

STRATHMORE PLACE

WARDELL AVENUE

TALBOT STREET

HARP DRIVE

SIMMS IRELAND PLACE

M.G.A. SCIMS

SEE SHEET 3

SEE SHEET 5

DRAINAGE RESERVE 19.95 WIDE

DRAINAGE RESERVE 19.97 WIDE

PUBLIC RESERVE

18 WIDE

SSM 144631 FD (DP1282739)

SSM 221885

RM DH&W's FD IN KB 68°56'~8.94 41°55'~15.465 (DP1282739)

RM DH&W's IN KB 44°55'20"~6.035 25°42'~13.565

RM DH&W's IN KB 60°04'10"~7.645 34°16'~14.26

RM DH&W's IN KB 59°56'25"~7.605 34°06'40"~14.265

RM DH&W's FD 9°00'~7.98 5°08'~14.1 (DP1282739)

RM DH&W's IN KB 9°00'40"~4.965 8°21'~13.035

RM DH&W's IN KB 10°43'20"~4.935 11°02'~13.03

RM DH&W's IN KB 10°37'10"~4.955 11°15'50"~13.06

RM DH&W's FD 350°09'~14.85 355°38'~20.77 (DP 1129595)

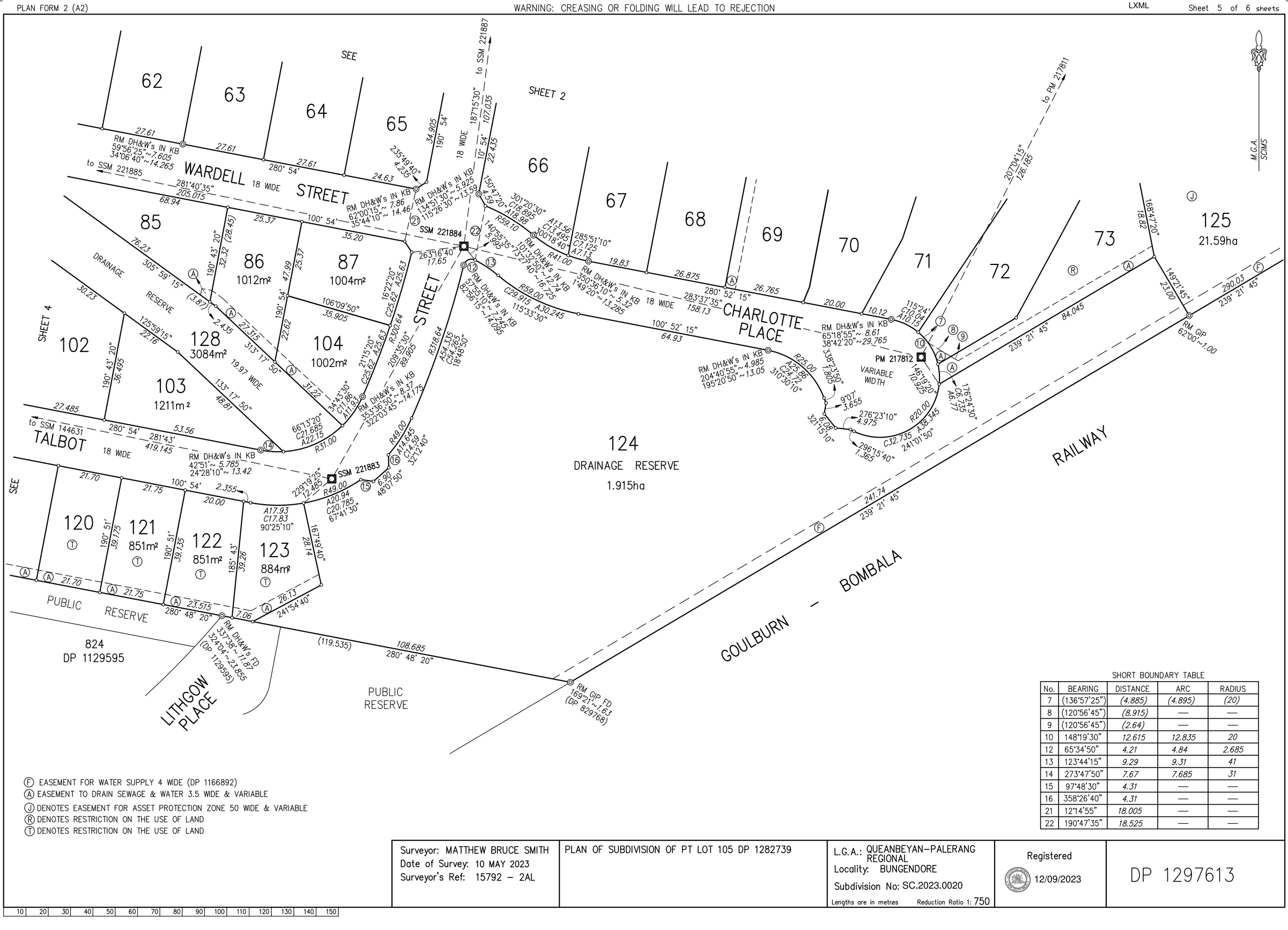
Lot	Area
74	914m²
75	875m²
76	873m²
77	873m²
78	873m²
79	873m²
80	873m²
81	873m²
82	873m²
83	952m²
84	1211m²
85	1114m²
86	
88	911m²
89	875m²
90	873m²
91	873m²
92	873m²
93	873m²
94	873m²
95	873m²
96	873m²
97	873m²
98	873m²
99	1069m²
100	1268m²
101	1101m²
102	1176m²
103	
105	851m²
106	851m²
107	850m²
108	850m²
109	851m²
110	850m²
111	851m²
112	850m²
113	850m²
114	851m²
115	850m²
116	851m²
117	850m²
118	850m²
119	851m²
120	850m²
121	851m²
122	
127	
128	3084m²

834 DP 1129595; 835 DP 1129595; 836 DP 1129595; 837 DP 1129595; 838 DP 1129595; 839 DP 1129595; 840 DP 1129595; 824 DP 1129595

Ⓐ EASEMENT TO DRAIN SEWAGE & WATER 3.5 WIDE & VARIABLE
Ⓗ EASEMENT FOR MULTI PURPOSE ELECTRICAL INSTALLATION 4.2 WIDE
Ⓣ DENOTES RESTRICTION ON THE USE OF LAND

Surveyor: MATTHEW BRUCE SMITH Date of Survey: 10 MAY 2023 Surveyor's Ref: 15792 – 2AL	PLAN OF SUBDIVISION OF PT LOT 105 DP 1282739	L.G.A.: QUEANBEYAN–PALERANG REGIONAL Locality: BUNGENDORE Subdivision No: SC.2023.0020 Lengths are in metres Reduction Ratio 1: 750	Registered 12/09/2023	DP 1297613

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



SHORT BOUNDARY TABLE				
No.	BEARING	DISTANCE	ARC	RADIUS
7	(136°57'25")	*(4.885)*	*(4.895)*	*(20)*
8	(120°56'45")	*(8.915)*	—	—
9	(120°56'45")	*(2.64)*	—	—
10	148°19'30"	*12.615*	*12.835*	*20*
12	65°34'50"	*4.21*	*4.84*	*2.685*
13	123°44'15"	*9.29*	*9.31*	*41*
14	273°47'50"	*7.67*	*7.685*	*31*
15	97°48'30"	*4.31*	—	—
16	358°26'40"	*4.31*	—	—
21	12°14'55"	*18.005*	—	—
22	190°47'35"	*18.525*	—	—

Ⓕ EASEMENT FOR WATER SUPPLY 4 WIDE (DP 1166892)
Ⓐ EASEMENT TO DRAIN SEWAGE & WATER 3.5 WIDE & VARIABLE
Ⓙ DENOTES EASEMENT FOR ASSET PROTECTION ZONE 50 WIDE & VARIABLE
Ⓡ DENOTES RESTRICTION ON THE USE OF LAND
Ⓣ DENOTES RESTRICTION ON THE USE OF LAND

Surveyor: MATTHEW BRUCE SMITH Date of Survey: 10 MAY 2023 Surveyor's Ref: 15792 – 2AL	PLAN OF SUBDIVISION OF PT LOT 105 DP 1282739	L.G.A.: QUEANBEYAN–PALERANG REGIONAL Locality: BUNGENDORE Subdivision No: SC.2023.0020 Lengths are in metres Reduction Ratio 1: 750	Registered 12/09/2023	DP 1297613

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

Ⓙ DENOTES EASEMENT FOR ASSET PROTECTION ZONE 50 WIDE & VARIABLE

M.G.A. SCIMS

RM DH&W's IN KB FD 285°31' ~ 4.83 286°18'40"~12.90 (DP 1282739)

100° 53' 45"

RM GIP FD 247°53'~1.0 (DP 1282739)

100°53'45" 18.095

R37 A&C1.53 19°36'40"

R49 A&C4.72 18°16'

(32.34)

1 DP 880087

100° 53' 45" 975.645

RESERVE DRAINAGE

102 10 11 12

WHITTON RISE 18 WIDE

AVENUE 18 WIDE

21°01'35" 37.28

100°54' 4.555

RM DH&W's IN KB FD 65°27'~7.90 40°50'40"~15 (DP 1282739)

305°58' 4.060

PM 180102 GONE PM 217810

ROAD 18 WIDE

190°54' 18.00

PM–CNR 178°45'30" 1.075

100°54' 8.84

60°57'55" 3.85

DRAINAGE RESERVE

15 14 13

DP 1282739

18 WIDE

21°01'35" 69.275

(21°01'35") (178.865)

201°01'35"

DP 1282739

31 32 33 34

HARP AVENUE

15°02'30" 9.59

352°58' 11.375

26°07'55" 140.185

16.33 288°53'55"

280°54' 5.577

RM DH&W's IN KB FD 93°14'40"~20.01 55°02'~29.44 (DP 1282739)

120°44' 607.76

125 21.59ha

BIRCHFIELD DRIVE 23.4 WIDE

ROAD VARIABLE WIDTH

190°54' 23.40

23.4 WIDE

to PM 217811

37 36 35

DP 1282739

206°06'55"

SSM 144629 FD (DP 1282739)

243°28' 22.53

258°59'30" 5.265 11.71 274°21'25" 280°54' 4.09

96°00' 6.06

261°56'30" 580.365 to SSM 132522 FD

218°29'10" 9.64

DP 1282739

60 61 62

50.455

212° 28' 20"

18 WIDE

AVENUE

22.54

HARP

35°09'30" 101.605 PO & BY ME

32° 28' 20"

to SSM 144630

SEE SHEET 2

1 2 3 4 5 6 7

14.27 22.41 22.545 22.83 22.83 100° 52' 15" 19.95 21.105 20.54 20.565 20.00

DRAINAGE RESERVE

Surveyor: MATTHEW BRUCE SMITH Date of Survey: 10 MAY 2023 Surveyor's Ref: 15792 – 2AL	PLAN OF SUBDIVISION OF PT LOT 105 DP 1282739	L.G.A.: QUEANBEYAN–PALERANG REGIONAL Locality: BUNGENDORE Subdivision No: SC.2023.0020 Lengths are in metres Reduction Ratio 1: 750	Registered 12/09/2023	DP 1297613

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PLAN FORM 6 (2017)	DEPOSITED PLAN ADMINISTRATION SHEET	Sheet 1 of 7 Sheets

Registered: 12/09/2023 Office Use Only

Title System: TORRENS

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DP1297613

PLAN OF SUBDIVISION OF PART LOT 105 DP 1282739

LGA: **QUEANBEYAN - PALERANG REGIONAL**

Locality: **BUNGENDORE**

Parish: **CURRANDOOLY**

County: **MURRAY**

Survey Certificate

I, MATTHEW BRUCE SMITH

of Shaw Surveys P/L 2/22 Strangways St., CURTIN ACT 2605

a surveyor registered under the *Surveying and Spatial Information Act 2002*, certify that:

*(a) The land shown in the plan was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, is accurate and the survey was completed on 10 MAY 2023, or

~~*(b) The part of the land shown in the plan (*being/*excluding** ..... was surveyed in accordance with the *Surveying and Spatial Information Regulation 2017*, the part surveyed is accurate and the survey was completed on, ..., the part not surveyed was compiled in accordance with that Regulation, or~~

~~*(c) The land shown in this plan was compiled in accordance with the *Surveying and Spatial Information Regulation 2017*.~~

Datum Line: X - Y

Type: URBAN

The terrain is Level-Undulating

Signature: ..... Dated: 10/05/2023

Surveyor Identification No: 8175
Surveyor registered under
the *Surveying and Spatial Information Act 2002*

*Strike out inappropriate words.

**Specify the land actually surveyed or specify any land shown in the plan that is not the subject of the survey.

Crown Lands NSW/Western Lands Office Approval

I, ... (Authorised Officer) in approving this plan certify that all necessary approvals in regard to the allocation of the land shown herein have been given.

Signature: .....

Date: .....

File Number: .....

Office: .....

Subdivision Certificate

I, ANDREW PALMER

Authorised Person/~~General Manager/*Accredited Certifier~~, certify the provisions of s.109J of the *Environmental Planning and Assessment Act 1979* have been satisfied in relation to the proposed subdivision, new road or reserve set out herein.

Signature: .....

Accreditation number: .....

Consent Authority: Queanbeyan-Palerang Regional Council

Date of endorsement: 11 August 2023

Subdivision Certificate number: SC.2023.0020

File number: DA.2021.1609

*Strike through if inapplicable.

Plans used in the preparation of survey/compilation.

DP 1282739	DP 1011276	DP 747767
DP 1068066	DP 1061647	DP 1166892
DP 1129595	DP 829768	DP 855517
DP 1087861	DP 1236462	DP 880087
R32105-1603	M6057-1956	DP 1059913

Statements of intention to dedicate public roads, create public reserves and drainage reserves, acquire/resume land.

IT IS INTENDED TO DEDICATE ELLEN STREET, WARDELL STREET, CHARLOTTE PLACE& TALBOT STREET TO THE PUBLIC AS PUBLIC ROAD.

IT IS INTENDED TO DEDICATE ROAD WIDENING TO THE PUBLIC AS ROAD

IT IS INTENDED TO CREATE LOTS 124, 126, 127, 128 & 129 AS DRAINAGE RESERVES.

Surveyor's Reference: 15792-2AL

Signatures, Seals and Section 88B Statements should appear on PLAN FORM 6A

PLAN FORM 6A (2017) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 2 of 7 Sheets

Registered: 12/09/2023 Office Use Only

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DP1297613

PLAN OF SUBDIVISION OF PART LOT 105
DP 1282739

Subdivision Certificate number: SC.2023.0020

Date of Endorsement: 11 August 2023

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT 1919, AS AMENDED, IT IS INTENDED TO CREATE:

1) EASEMENT TO DRAIN SEWAGE & WATER 3.5 WIDE AND VARIABLE(A)
2) EASEMENT FOR MULTI PURPOSE ELECTRICAL INSTALLATION 4.2 WIDE(H)
3) EASEMENT FOR ASSET PROTECTION ZONE 50 WIDE & VARIABLE (J)
4) RESTRICTION ON THE USE OF LAND
5) RESTRICTION ON THE USE OF LAND(R)
6) RESTRICTION ON THE USE OF LAND
7) RESTRICTION ON THE USE OF LAND(T)

EXECUTED BY ELMSLEA LAND DEVELOPMENTS PTY LIMITED ACN 066 447 265
IN ACCORDANCE WITH SECTION 127 OF THE CORPORATIONS ACT 2001

ALEX BRINKMEYER
DIRECTOR

JUTTA BRINKMEYER
DIRECTOR

EXECUTED BY PCL MONEY PTY LIMITED ACN 120 398 487 IN ACCORDANCE WITH SECTION 127 OF THE CORPORATIONS ACT 2001

EXECUTED on behalf of PCL MONEY PTY LIMITED ACN 120 398 487 pursuant to Section 127 of the Corporations Act 2001 by its authorised officer:

Martin Richard Anstee
Sole Director/Secretary

If space is insufficient use additional annexure sheet

Surveyor's Reference: 15792-2AL

PLAN FORM 6A (2017) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 3 of 7 Sheets

Office Use Only

Registered: 12/09/2023

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DP1297613

PLAN OF SUBDIVISION OF PART LOT 105 DP 1282739

Subdivision Certificate number: SC.2023.0020

Date of Endorsement: 11 August 2023

This sheet is for the provision of the following information as required:

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- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
1	1	ELLEN	STREET	BUNGENDORE
2	3	ELLEN	STREET	BUNGENDORE
3	5	ELLEN	STREET	BUNGENDORE
4	7	ELLEN	STREET	BUNGENDORE
5	9	ELLEN	STREET	BUNGENDORE
6	13	ELLEN	STREET	BUNGENDORE
7	15	ELLEN	STREET	BUNGENDORE
8	17	ELLEN	STREET	BUNGENDORE
9	19	ELLEN	STREET	BUNGENDORE
10	21	ELLEN	STREET	BUNGENDORE
11	23	ELLEN	STREET	BUNGENDORE
12	25	ELLEN	STREET	BUNGENDORE
13	27	ELLEN	STREET	BUNGENDORE
14	29	ELLEN	STREET	BUNGENDORE
15	31	ELLEN	STREET	BUNGENDORE
16	33	ELLEN	STREET	BUNGENDORE
17	35	ELLEN	STREET	BUNGENDORE
18	39	ELLEN	STREET	BUNGENDORE
19	41	ELLEN	STREET	BUNGENDORE
20	43	ELLEN	STREET	BUNGENDORE
21	45	ELLEN	STREET	BUNGENDORE
22	47	ELLEN	STREET	BUNGENDORE
23	49	ELLEN	STREET	BUNGENDORE
24	51	ELLEN	STREET	BUNGENDORE
25	53	ELLEN	STREET	BUNGENDORE
26	55	ELLEN	STREET	BUNGENDORE
27	~~57~~ 2	ELLEN	STREET	BUNGENDORE

If space is insufficient use additional annexure sheet

Surveyor's Reference: 15792-2AL

STREET NUMBER AMENDED. SEE 2024-321 2/05/2024

PLAN FORM 6A (2017) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 4 of 7 Sheets

Registered: 12/09/2023 Office Use Only

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DP1297613

PLAN OF SUBDIVISION OF PART LOT 105 DP 1282739

Subdivision Certificate number: SC.2023.0020

Date of Endorsement: 11 August 2023

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
28	4	ELLEN	STREET	BUNGENDORE
29	6	ELLEN	STREET	BUNGENDORE
30	8	ELLEN	STREET	BUNGENDORE
31	10	ELLEN	STREET	BUNGENDORE
32	14	ELLEN	STREET	BUNGENDORE
33	16	ELLEN	STREET	BUNGENDORE
34	18	ELLEN	STREET	BUNGENDORE
35	20	ELLEN	STREET	BUNGENDORE
36	22	ELLEN	STREET	BUNGENDORE
37	24	ELLEN	STREET	BUNGENDORE
38	26	ELLEN	STREET	BUNGENDORE
39	28	ELLEN	STREET	BUNGENDORE
40	30	ELLEN	STREET	BUNGENDORE
41	32	ELLEN	STREET	BUNGENDORE
42	34	ELLEN	STREET	BUNGENDORE
43	36	ELLEN	STREET	BUNGENDORE
44	38	ELLEN	STREET	BUNGENDORE
45	40	ELLEN	STREET	BUNGENDORE
46	42	ELLEN	STREET	BUNGENDORE
47	44	ELLEN	STREET	BUNGENDORE
48	46	ELLEN	STREET	BUNGENDORE
49	48	ELLEN	STREET	BUNGENDORE
50	50	ELLEN	STREET	BUNGENDORE
51	52	ELLEN	STREET	BUNGENDORE
52	1	WARDELL	STREET	BUNGENDORE
53	3	WARDELL	STREET	BUNGENDORE
54	5	WARDELL	STREET	BUNGENDORE

If space is insufficient use additional annexure sheet

Surveyor's Reference: 15792-2AL

PLAN FORM 6A (2017) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 5 of 7 Sheets

Office Use Only

Registered: 12/09/2023

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DP1297613

PLAN OF SUBDIVISION OF PART LOT 105 DP 1282739

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

Subdivision Certificate number: SC.2023.0020

Date of Endorsement: 11 August 2023

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
55	7	WARDELL	STREET	BUNGENDORE
56	9	WARDELL	STREET	BUNGENDORE
57	11	WARDELL	STREET	BUNGENDORE
58	13	WARDELL	STREET	BUNGENDORE
59	17	WARDELL	STREET	BUNGENDORE
60	19	WARDELL	STREET	BUNGENDORE
61	21	WARDELL	STREET	BUNGENDORE
62	23	WARDELL	STREET	BUNGENDORE
63	25	WARDELL	STREET	BUNGENDORE
64	27	WARDELL	STREET	BUNGENDORE
65	29	WARDELL	STREET	BUNGENDORE
66	1	CHARLOTTE	PLACE	BUNGENDORE
67	3	CHARLOTTE	PLACE	BUNGENDORE
68	5	CHARLOTTE	PLACE	BUNGENDORE
69	7	CHARLOTTE	PLACE	BUNGENDORE
70	9	CHARLOTTE	PLACE	BUNGENDORE
71	11	CHARLOTTE	PLACE	BUNGENDORE
72	13	CHARLOTTE	PLACE	BUNGENDORE
73	15	CHARLOTTE	PLACE	BUNGENDORE
74	2	WARDELL	STREET	BUNGENDORE
75	4	WARDELL	STREET	BUNGENDORE
76	6	WARDELL	STREET	BUNGENDORE
77	8	WARDELL	STREET	BUNGENDORE
78	10	WARDELL	STREET	BUNGENDORE
79	12	WARDELL	STREET	BUNGENDORE
80	14	WARDELL	STREET	BUNGENDORE
81	16	WARDELL	STREET	BUNGENDORE

If space is insufficient use additional annexure sheet

Surveyor's Reference: 15792-2AL

PLAN FORM 6A (2017) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 6 of 7 Sheets

Registered: 12/09/2023 Office Use Only

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PLAN OF SUBDIVISION OF PART LOT 105
DP 1282739

Subdivision Certificate number: SC.2023.0020

Date of Endorsement: 11 August 2023

This sheet is for the provision of the following information as required:

- A schedule of lots and addresses - See 60(c) *SSI Regulation 2017*
- Statements of intention to create and release affecting interests in accordance with section 88B *Conveyancing Act 1919*
- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
82	18	WARDELL	STREET	BUNGENDORE
83	20	WARDELL	STREET	BUNGENDORE
84	22	WARDELL	STREET	BUNGENDORE
85	26	WARDELL	STREET	BUNGENDORE
86	28	WARDELL	STREET	BUNGENDORE
87	30	WARDELL	STREET	BUNGENDORE
88	1	TALBOT	STREET	BUNGENDORE
89	3	TALBOT	STREET	BUNGENDORE
90	5	TALBOT	STREET	BUNGENDORE
91	7	TALBOT	STREET	BUNGENDORE
92	9	TALBOT	STREET	BUNGENDORE
93	11	TALBOT	STREET	BUNGENDORE
94	13	TALBOT	STREET	BUNGENDORE
95	15	TALBOT	STREET	BUNGENDORE
96	17	TALBOT	STREET	BUNGENDORE
97	19	TALBOT	STREET	BUNGENDORE
98	21	TALBOT	STREET	BUNGENDORE
99	23	TALBOT	STREET	BUNGENDORE
100	25	TALBOT	STREET	BUNGENDORE
101	27	TALBOT	STREET	BUNGENDORE
102	29	TALBOT	STREET	BUNGENDORE
103	31	TALBOT	STREET	BUNGENDORE
104	35	TALBOT	STREET	BUNGENDORE
105	2	TALBOT	STREET	BUNGENDORE
106	4	TALBOT	STREET	BUNGENDORE
107	6	TALBOT	STREET	BUNGENDORE
108	8	TALBOT	STREET	BUNGENDORE

If space is insufficient use additional annexure sheet

Surveyor's Reference: 15792-2AL

PLAN FORM 6A (2017) **DEPOSITED PLAN ADMINISTRATION SHEET** Sheet 7 of 7 Sheets

Office Use Only

Registered: 12/09/2023

Office Use Only

DP1297613

PLAN OF SUBDIVISION OF PART LOT 105
DP 1282739

Subdivision Certificate number: SC.2023.0020

Date of Endorsement: 11 August 2023

This sheet is for the provision of the following information as required:

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- Signatures and seals- see 195D *Conveyancing Act 1919*
- Any information which cannot fit in the appropriate panel of sheet 1 of the administration sheets.

LOT	STREET NUMBER	STREET NAME	STREET TYPE	LOCALITY
109	10	TALBOT	STREET	BUNGENDORE
110	12	TALBOT	STREET	BUNGENDORE
111	14	TALBOT	STREET	BUNGENDORE
112	16	TALBOT	STREET	BUNGENDORE
113	18	TALBOT	STREET	BUNGENDORE
114	20	TALBOT	STREET	BUNGENDORE
115	22	TALBOT	STREET	BUNGENDORE
116	24	TALBOT	STREET	BUNGENDORE
117	26	TALBOT	STREET	BUNGENDORE
118	28	TALBOT	STREET	BUNGENDORE
119	30	TALBOT	STREET	BUNGENDORE
120	32	TALBOT	STREET	BUNGENDORE
121	34	TALBOT	STREET	BUNGENDORE
122	36	TALBOT	STREET	BUNGENDORE
123	38	TALBOT	STREET	BUNGENDORE
124		N/A		BUNGENDORE
125		N/A		BUNGENDORE
126		N/A		BUNGENDORE
127		N/A		BUNGENDORE
128		N/A		BUNGENDORE
129		N/A		BUNGENDORE

If space is insufficient use additional annexure sheet

Surveyor's Reference: 15792-2AL

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
22/10/2024 5:21PM

FOLIO: 1/798111

First Title(s): OLD SYSTEM
Prior Title(s): CA35954

Recorded	Number	Type of Instrument	C.T. Issue
6/3/1989	CA35954	CONVERSION ACTION	FOLIO CREATED EDITION 1
		PRIOR TITLES(S) AS AMENDED: CA35959.	
20/6/1991	Z730048	DEPARTMENTAL DEALING	
6/5/2004	AA611120	DEPARTMENTAL DEALING	
30/9/2004	AA989334	DISCHARGE OF MORTGAGE	EDITION 2
9/11/2004	AB81365	TRANSFER	EDITION 3
28/9/2009	AE989005	MORTGAGE	EDITION 4
20/4/2011	AG189417	DISCHARGE OF MORTGAGE	EDITION 5
13/7/2011	DP1166892	DEPOSITED PLAN	EDITION 6
18/9/2020	AQ403420	MORTGAGE	EDITION 7
25/6/2021	AR178716	DISCHARGE OF MORTGAGE	
25/6/2021	AR178717	MORTGAGE	EDITION 8
30/6/2022	DP1282739	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Form: 01T
Licence: 01-08-067
Licensee: Midware Systems
Baker Deane & Nutt

TRANSFER
New South Wales
Real Property Act 1900

PRIVACY NOTE: this information is legally required and wil

AB81365X

STAMP DUTY Office of State Revenue use only

Office of State Revenue
NSW Treasury
317
Trans No: 2744137

NEW SOUTH WALES DUTY
04-11-2004 3002277535-001
SECTION 18(2)
DUTY $ 12,002.00

(A) **TORRENS TITLE** If appropriate, specify the part transferred
Folio Identifier 1/798111

(B) **LODGED BY**

Delivery Box	Name, Address or DX and Telephone	CODE
	Reference (optional):	T TW (Sheriff)

(C) **TRANSFEROR** **GREGORY ARTHUR BROWN and SYLVIA JOAN BROWN**

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of $ 1,500,000.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple.

(F) **SHARE TRANSFERRED** WHOLE

(G) Encumbrances (if applicable):

(H) **TRANSFEREE** **ELMSLEA LAND DEVELOPMENTS PTY LIMITED ACN 066 447 265**

(I) **TENANCY:**

(J) **DATE** ..... / ..... / .....

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness: Deborah Bremer

Name of witness: DEBORAH BREMER

Address of witness: 26C CRANFORD STREET
QUEANBEYAN NSW 2620

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor: G Brown J Brown

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name: IAN LONGFIELD MARJASON
Signatory's capacity: Solicitor for the transferee

Historical Title

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
22/10/2024 5:21PM

FOLIO: 105/1282739

First Title(s): OLD SYSTEM
Prior Title(s): 1/798111

Recorded	Number	Type of Instrument	C.T. Issue
30/6/2022	DP1282739	DEPOSITED PLAN	FOLIO CREATED EDITION 1
10/8/2022	AS380521	MORTGAGE	EDITION 2
17/4/2023	AS975337	DISCHARGE OF MORTGAGE	EDITION 3
30/8/2023	DP1292073	WITHDRAWN - PRE-EXAMINATION PLAN	
12/9/2023	DP1297613	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

Received: 22/10/2024 17:20:03

LAND REGISTRY SERVICES

Historical Search

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
22/10/2024 5:20PM

FOLIO: 125/1297613

First Title(s): OLD SYSTEM
Prior Title(s): 105/1282739

Recorded	Number	Type of Instrument	C.T. Issue
12/9/2023	DP1297613	DEPOSITED PLAN	FOLIO CREATED EDITION 1
2/1/2024	AT738629	MORTGAGE	EDITION 2
26/7/2024	AU277514	DISCHARGE OF MORTGAGE	EDITION 3

*** END OF SEARCH ***

Received: 22/10/2024 17:20:58

Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 125/1297613

SEARCH DATE	TIME	EDITION NO	DATE
22/10/2024	5:20 PM	3	26/7/2024

LAND

LOT 125 IN DEPOSITED PLAN 1297613
AT BUNGENDORE
LOCAL GOVERNMENT AREA QUEANBEYAN-PALERANG REGIONAL
PARISH OF CURRANDOOLY COUNTY OF MURRAY
TITLE DIAGRAM DP1297613

FIRST SCHEDULE

ELMSLEA LAND DEVELOPMENTS PTY LIMITED

SECOND SCHEDULE (4 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 BK 3754 NO 706 COVENANT
3 DP1166892 EASEMENT FOR WATER SUPPLY 4 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP1297613 EASEMENT FOR ASSET PROTECTION ZONE 50 METRE(S) WIDE AND VARIABLE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM

NOTATIONS

UNREGISTERED DEALINGS: PP DP1308149.

*** END OF SEARCH ***

Section 10.7 Certificates

QUEANBEYAN-PALERANG REGIONAL COUNCIL
SECTION 10.7(2&5) PLANNING CERTIFICATE
issued under
Environmental Planning and Assessment Act 1979

Certificate No.: PL.2024.2201
Your Reference: E37084PT

JK Environments Pty Ltd
115 Wicks Road
MACQUARIE PARK NSW 2113

mrichard@jkgroup.net.au

Subject Land:

Property Number:	358262
Property Address:	18 Harp Avenue BUNGENDORE NSW 2621
Legal Description:	Lot 125 DP 1297613

This certificate is provided under Section 10.7(2&5) of the Act. At the date of this certificate, the subject land is affected by the following matters:

1. Names of relevant instruments and development control plans

1.1. The name of each environmental planning instrument and development control plan that applies to the carrying out of development on the land.

1.1.1 Local Environmental Plan

Queanbeyan-Palerang Regional Local Environmental Plan 2022
https://legislation.nsw.gov.au/view/html/inforce/current/epi-2022-0600

1.1.2 State Environmental Planning Policies (SEPPs):

- *SEPP (Biodiversity and Conservation) 2021*
- *SEPP (Exempt and Complying Development Codes) 2008*
- *SEPP (Housing) 2021*
- *SEPP (Industry and Employment) 2021*
- *SEPP (Planning Systems) 2021*
- *SEPP (Precincts - Regional) 2021*
- *SEPP (Primary Production) 2021*
- *SEPP (Resilience and Hazards) 2021*
- *SEPP (Resources and Energy) 2021*
- *SEPP (Sustainable Buildings) 2022*
- *SEPP (Transport and Infrastructure) 2021*

www.legislation.nsw.gov.au/browse/inforce#/epi/title/s

1.1.3 Development Control Plan

Lot 125 DP 1297613 **Palerang Development Control Plan 2015**
www.qprc.nsw.gov.au/Building-Development/Planning-Zoning/Planning-Controls#section-3

1.2. The name of each proposed environmental planning instrument and draft development control plan, which is subject to community consultation or public exhibition under the Act, that will apply to the carrying out of development on the land.

Proposed environmental planning *instrument means a draft environmental planning instrument and includes a planning proposal for a local environmental plan.*

1.2.1. Draft Local Environmental Plans

Application No	Description

Not applicable.

www.planningportal.nsw.gov.au/ppr

1.2.2. Draft State Environmental Planning Policies (SEPPs):

- *SEPP (Housing) 2021*
- *SEPP (Planning Systems) 2021*
- *SEPP (Transport and Infrastructure)2021*

www.planning.nsw.gov.au/policy-and-legislation/state-environmental-planning-policies

Yes. Changes to Business and Industrial zones in Local Environmental Plans
On 26 April 2023, Business and Industrial zones were replaced by Employment zones within standard instrument local environmental plans. The Department of Planning and Environment exhibited in May 2022 details of how each Local Environmental Plan that includes a Business or Industrial zone will be amended to include Employment zones. The exhibition detail can be viewed on the NSW Planning Portal. www.planningportal.nsw.gov.au/employment-zones

1.2.3. Draft Development Control Plans (DCPs):

Lot 125 DP 1297613 No.

2. Zoning and land use under relevant LEPs

2.1. Identity of the zone:

Lot 125 DP 1297613 **R2 Low Density Residential**

2.2 **R2 Low Density Residential - *Queanbeyan-Palerang Regional LEP 2022***

1. Objectives of zone
   - **To provide for the housing needs of the community within a low density residential environment.**
   - **To enable other land uses that provide facilities or services to meet the day to day needs of residents.**
   - **To ensure new development complements the scale, density and form of existing development.**
   - **To encourage development that is consistent with the low density amenity of existing and future residents.**
   - **To encourage development that is designed to recognise the bushland character of the locality, where appropriate, and to minimise the impact of urban development, particularly on the edge of the urban area.**

2. Permitted without consent
   Home businesses; Home occupations.

3. Permitted with consent
   Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Centre-based child care facilities; Community facilities; Dual occupancies; Dwelling houses; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Group homes; Health consulting rooms; Home-based child care; Home industries; Neighbourhood shops; Oyster aquaculture; Pond-based aquaculture; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Respite day care centres; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Tank-based aquaculture; Water reticulation systems.

4. Prohibited
   Any other development not specified in item 2 or 3.

   Note: Demolition of a building or work requires consent under clause 2.7 of *Queanbeyan-Palerang Regional Local Environmental Plan 2022*

2.3. Listed below are additional site specific permitted uses (only with development consent) from Schedule 1 of *Queanbeyan-Palerang Regional Local Environmental Plan 2022*.

Lot 125 DP 1297613 **There are no additional uses permitted on this land.**

2.4. Minimum land dimensions for the erection of a dwelling house on the land fixed by development standards applying to the land:

Lot 125 DP 1297613	**R2 - Low Density Residential** **The minimum lot size for the erection of a dwelling house is 850 square metres, unless the lot:** **(a) is a lot created in accordance with clause 4.1, 4.1AA, 4.1A, 4.1D, 4.1E, 7.24, 7.25 or 7.26 of Queanbeyan-Palerang Regional Local Environmental Plan 2022, or** **(b) is a lot created before the commencement of Queanbeyan-Palerang Regional Local Environmental Plan 2022 and on which the erection of a dwelling was permissible immediately before that commencement, or** **(c) is a lot resulting from a subdivision for which development consent (or equivalent) was granted before the commencement of Queanbeyan-Palerang Regional Local Environmental Plan 2022 and on which the erection of a dwelling would have been permissible if the plan of subdivision had been registered before that commencement, or** **(d) an existing holding, or** **(e) would have been a lot or a holding specified in paragraphs (a) - (d) had it not been affected by:** **(i) a minor realignment of boundaries that did not create an additional lot, or** **(ii) a subdivision creating or widening a public road or public reserve or for another public purpose, or** **(iii) a consolidation with an adjoining public road or public reserve, or for another public purpose.**

2.5. Whether the land is in an area of outstanding biodiversity value under the *Biodiversity Conservation Act 2016*:

Lot 125 DP 1297613 **No.**

2.6. Whether the land is in a conservation area:

Lot 125 DP 1297613 **No.**

2.7. Whether an item of environmental heritage is located on the land:

Lot 125 DP 1297613 **No.**

3. Contributions plans

3.1. The name of each contributions plan under the Act, Division 7.1 applying to the land, including draft contributions plans:

Lot 125 DP 1297613	**Bungendore Section 7.11 Contributions Plan No. 8 - Provision of Pathway Network.**
Lot 125 DP 1297613	**Bungendore Section 7.11 Contributions Plan No. 9 - Street Upgrading.**
Lot 125 DP 1297613	**Bungendore Section 7.11 Development Contributions Plan for Car Parking Facilities 2021.**
Lot 125 DP 1297613	**Bungendore Section 7.11 Development Contributions Plan for Community and Recreation Facilities 2022.**
Lot 125 DP 1297613	**Yarrowlumla Council Section 94 Contributions Plan No. 2 for Provisions of Access Roads.**

www.qprc.nsw.gov.au/Building-Development/Planning-Zoning/Planning-controls#section-6

3.2. If the land is in a special contributions area under the Act, Division 7.1, the name of the area:

Lot 125 DP 1297613 **No.**

3.3. If the land is in a special contributions area to which a continued 7.23 determination applies, the name of the area:

Lot 125 DP 1297613 **No.**

4. Complying Development

4.1. If the land is land on which complying development may be carried out under each of the complying development codes under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008,* because of that Policy, clause1.17A (1) (c)-(e), (2), (3) or (4), 1.18 (1) (c3) or 1.19.

Zone R2 Low Density Residential Lot 125 DP 1297613	**Land on which complying development may be carried out**
Part 3 Housing Code	**Not Applicable**
Part 3A Rural Housing Code	**Not Applicable**
Part 3B Low Rise Housing Diversity Code	**Yes**
Part 3C Greenfield Housing Code	**Not Applicable**
Part 3D Inland Code	**Yes**
Part 4 Housing Alterations Code	**Yes**
Part 4A General Development Code	**Yes**
Part 5 Industrial and Business Alterations Code	**Yes**
Part 5A Industrial and Business Buildings Code	**Not Applicable**
Part 5B Container Recycling Facilities Code	**Not Applicable**
Part 6 Subdivisions Code	**Yes**
Part 7 Demolition Code	**Yes**
Part 8 Fire Safety Code	**Yes**
Part 9 Agritourism and Farm Stay Accommodation Code	**Not Applicable**

Specific land exemptions may apply only to part of a lot. Nothing in clause 1.19 *SEPP (Exempt and Complying Development Codes) 2008* prevents complying development being carried out on part of a lot that is not land referred to in clause 1.19 even if other parts of the lot are such land.

4.2. If complying development may not be carried out on that land because of one of those clauses, the reasons why it may not be carried out under the clause.

Not Applicable.	

4.3. If the complying development codes are varied, under that Policy, clause 1.12, in relation to the land.

Lot 125 DP 1297613 **The Inland Code is varied.**

5. Exempt development

5.1. If the land is land on which exempt development may be carried out under each of the exempt development codes under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008,* because of that Policy, clause 1.16(1)(b1)-(d) or 1.16A.

Does the land meet the requirements under Clause 1.16(1)(b1)-(d) as land on which exempt development may be carried out for the following exempt development codes:

5.1.1. Division 1 General Exempt Development Code

Lot 125 DP 1297613 Yes.

5.1.2. Division 2 Advertising and Signage Exempt Development Code

Lot 125 DP 1297613 Yes.

5.1.3. Division 3 Temporary Uses and Structures Exempt Development Code

Lot 125 DP 1297613 Yes.

Refer also to Part 3 and Schedule 2 of *Queanbeyan-Palerang Regional Local Environmental Plan 2022*. This Schedule contains additional exempt development not specified in *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*. Note that exempt development may be carried out without the need for development consent under the Act, however, such development is not exempt from any approval, licence, permit or authority that is required under any other Act and adjoining owners' property rights and the common law still apply.

5.2. If exempt development may not be carried out on that land because of one of those clauses, the reasons why it may not be carried out under the clause.

5.2.1. Division 1 General Exempt Development Code

Lot 125 DP 1297613 Not applicable.

5.2.2. Division 2 Advertising and Signage Exempt Development Code

Lot 125 DP 1297613 Not applicable.

5.2.3. Division 3 Temporary Uses and Structures Exempt Development Code

Lot 125 DP 1297613 Not applicable.

5.3. If the exempt development codes are varied, under that Policy, clause 1.12, in relation to the land.

Not applicable.

6. Affected building notices and building product rectification orders

Affected building notice has the same meaning as in the *Building Products (Safety) Act 2017*, Part 4.
Building product rectification order has the same meaning as in the *Building Products (Safety) Act 2017*

6.1. Is there any affected building notice of which the council is aware that is in force in respect of the land?

No.

6.2. Is there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with, and

No.

6.3. Whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding.

No.

7. Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 3.15 of the Act.

Lot 125 DP 1297613 **No.**

8. Road widening and road realignment

8.1. Is the land affected by a road widening or road realignment under Division 2 of Part 3 of the *Roads Act 1993*?

Lot 125 DP 1297613 **No.**

8.2. Is the land affected by any road widening or road realignment under any environmental planning instrument?

Lot 125 DP 1297613 **No.**

8.3. Is the land affected by any road widening or road realignment under any resolution of the Council?

Lot 125 DP 1297613 **No.**

9. Flood related development controls information

Flood planning area has the same meaning as in the *Flood Risk Management Manual.*
Flood Risk Management Manual means the *Flood Risk Management Manual (ISBN 978-1-923076-17-4)* published by the NSW Government in June 2023.
Probable maximum flood has the same meaning as in the *Flood Risk Management Manual.*

9.1. Whether the land or part of the land is within the flood planning area and is subject to flood related development controls.

Lot 125 DP 1297613 **No.**

9.2. Whether the land or part of the land is between the flood planning area and the probable maximum flood and is subject to flood related development controls.

Lot 125 DP 1297613 **No.**

10. Council and other public authority policies on hazard risk restrictions

Is the land affected by a policy adopted by council that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or any other risk (other than flooding)?

Adopted policy means a policy adopted—
(a) by the council, or
(b) by another public authority, if the public authority has notified the council that the policy will be included in a planning certificate issued by the council.

10.1. Tidal inundation, subsidence, acid sulphate soils, coastal hazards and sea level rise:

No.

10.2. Bushfire:

All land in QPRC is affected by policies adopted by the council that restricts the development of the land because of the likelihood of bushfire. Refer to Clause 11 of this certificate to check if the land is bushfire prone.

10.3. Contamination:

All land in QPRC is affected by policies adopted by the council that restricts the development of the land because of the likelihood of contamination. Refer to Clause 12 of this certificate to check if the land has been identified in the Loose-Fill Asbestos Insulation Register.

Lot 125 DP 1297613	**A Preliminary Site Investigation was undertaken by Douglas Partners in December 2016 and an addendum issued in September 2017 for Lot 1 DP 798111. Based on the findings of the investigation, the potential for significant contamination to be present within the site from on-site sources is considered to be low. However, risks from off-site sources, in particular the adjacent unlined landfill, include migrating leachate contaminated groundwater and landfill gas (particularly methane) and cannot be discounted. The investigation concluded that the site is suitable for the intended low density residential subject to the ongoing monitoring of the Bungendore Landfill Site to determine that a 250m no-build buffer is appropriate and the implementation of an unexpected finds protocol (UFP) to address potential contamination and bonded asbestos containing materials (ACM) encountered. It is also noted that during development and after the removal of the concrete slab from the former toilet, any hole used for septic waste, should be validated. Council has required the UFP as a condition of its approval for the subdivision of the land (DA.2020.1469). This condition is to address potential contamination for any bonded Asbestos Containing Material should it be uncovered on site during construction.**

10.4. Salinity:

Lot 125 DP 1297613	**No.**

10.5. Highly erodible soils:

Lot 125 DP 1297613	**No.**

10.6. Slopes over 18 degrees:

Lot 125 DP 1297613	**No.**

10.7. Aircraft noise:

Lot 125 DP 1297613	**No.** https://www.canberraairport.com.au/corporate/community/aircraft-noise/

10.8. Land near Cooma Road Quarry:

Lot 125 DP 1297613	**No.**

10.9. Land near Hume Industrial Area and Goulburn to Bombala Railway Line:

Lot 125 DP 1297613	**No.**

11. Bush fire prone land

Is the land bush fire prone?

Lot 125 DP 1297613 No.

12. Loose-fill asbestos insulation

If the land includes any residential premises (within the meaning of Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on the register that is required to be maintained under that Division.

No.

Council is not aware of any residential premises on the land that are affected by loose-fill asbestos insulation (Division 1A of Part 8 of the *Home Building Act 1989*) and that are listed on the NSW register that is required to be maintained under that Division.

NSW Fair Trading maintains a NSW Register of homes that are affected by loose-fill asbestos insulation: www.fairtrading.nsw.gov.au/loose-fill-asbestos-insulation-register

Some buildings located in the Queanbeyan-Palerang local government area have been identified as containing loose-fill asbestos insulation (sometimes referred to as "Mr Fluffy" insulation), for example, in the roof space. You should make your own enquiries as to the age of the buildings on the land to which this certificate relates.
If the land contains a building constructed prior to 1980, Queanbeyan-Palerang Regional Council strongly recommends that any potential purchaser obtains advice from a licensed asbestos assessor to determine whether loose-fill asbestos is present in any building on the land; and, if so, the health risks (if any) this may pose for the building's occupants.

Nothing in this statement relates to information about the presence of bonded asbestos materials such as asbestos cement sheeting that may have been used at this site.

Contact NSW Fair Trading for further information:
https://www.fairtrading.nsw.gov.au/housing-and-property/loose-fill-asbestos-insulation

13. Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of the *Coal Mine Subsidence Compensation Act 2017*.

No.

14. Paper subdivision information

The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

No.

15. Property Vegetation Plans

Whether Council has been notified that a property vegetation plan under the *Native Vegetation Act 2003* applies to the land.

Lot 125 DP 1297613 No.

16. Biodiversity stewardship sites

Whether the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*.

Lot 125 DP 1297613 **No.**

17. Biodiversity certified land

Whether the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*.

Lot 125 DP 1297613 **No.**

18. Orders under *Trees (Disputes Between Neighbours) Act 2006*

Whether Council has been notified whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land.

No.

19. Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

In relation to a coastal council—whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Not applicable.

20. Western Sydney Aerotropolis

For land to which *State Environmental Planning Policy (Precincts-Western Parkland City) 2021* applies, whether the land is:

20.1. in an ANEF or ANEC contour of 20 or greater as referred to in that Chapter, section 4.17, or
20.2. shown on the Lighting Intensity and Wind Shear Map, or
20.3. shown on the Obstacle Limitation Surface Map, or
20.4. in the "public safety area" on the Public Safety Area Map, or
20.5. in the "3 kilometre wildlife buffer zone" or the "13 kilometre wildlife buffer zone" on the Wildlife Buffer Zone Map.

Not applicable.

21. Development consent for seniors housing

If *State Environmental Planning Policy (Housing) 2021*, Chapter 3, Part 5 applies to the land, are there any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2)? Section 88(2) restricts who may occupy seniors housing accommodation.

Application No	Description

Not applicable.

22. Site compatibility certificates and conditions for affordable rental housing

22.1. Whether there is a current site compatibility certificate under *State Environmental Planning Policy (Housing) 2021*, or a former site compatibility certificate, of which the council is aware, in relation to proposed development on the land:

former site compatibility certificate means a site compatibility certificate issued under *State Environmental Planning Policy (Affordable Rental Housing) 2009.*

No.

22.2. If *State Environmental Planning Policy (Housing) 2021*, Chapter 2, Part 2, Division 1 or 5 applies to the land, are there any conditions of a development consent in relation to the land that are of a kind referred to in that Policy, section 21(1) or 40(1)? Section 21(1) or 40(1) specify certain conditions to be met for a period of at least 15 years commencing on the day an occupation certificate is issued.

Application No	Description

Not applicable.

22.3. Are there any conditions of a development consent in relation to land that are of a kind referred to in *State Environmental Planning Policy (Affordable Rental Housing) 2009*, clause 17(1) or 38(1)? Section 17(1) or 38(1) specify certain conditions to be met for a period of at least 10 years commencing on the day an occupation certificate is issued.

Application No	Description

Not applicable.

23. Water or sewerage services

Whether water or sewerage services are provided to, or to be provided to, the land under the *Water Industry Competition Act 2006*?

Note: A public water utility may not be the provider of some or all of the services to the land. If a water or sewerage service is provided to the land by a licensee under the *Water Industry Competition Act 2006*, a contract for the service will be deemed to have been entered into between the licensee and the owner of the land. A register relating to approvals and licences necessary for the provision of water or sewerage services under the *Water Industry Competition Act 2006* is maintained by the Independent Pricing and Regulatory Tribunal and provides information about the areas serviced, or to be serviced, under that Act. Purchasers should check the register to understand who will service the property. Outstanding charges for water or sewerage services provided under the *Water Industry Competition Act 2006* become the responsibility of the purchaser.

Not applicable.

Matters prescribed by section 59(2) *Contaminated Land Management Act 1997*

(a) Whether there is land to which a certificate relates regarding significantly contaminated land within the meaning of that Act.

Lot 125 DP 1297613 **No.**

(b) Whether there is land to which a certificate relates regarding being subject to a management order within the meaning of that Act.

Lot 125 DP 1297613 **No.**

(c) Whether there is land to which a certificate relates regarding the subject of an approved voluntary management proposal within the meaning of that Act.

Lot 125 DP 1297613 **No.**

(d) Whether there is land to which a certificate relates regarding being subject to an ongoing maintenance order within the meaning of that Act.

Lot 125 DP 1297613 **No.**

(e) Whether there is land to which a certificate relates regarding being the subject of a site audit statement within the meaning of that Act.

Lot 125 DP 1297613 **No.**

Additional notes

No additional notes.

Additional information provided in accordance with section 10.7(5) of the *Environmental Planning and Assessment Act 1979*

Vegetation Clearing:

There are restrictions on the clearing of vegetation on the land. Refer to:

- ***State Environmental Planning Policy (Biodiversity and Conservation) 2021***
- ***Biodiversity Conservation Act 2016***
- ***Local Land Services Act 2013***
- **relevant Development Control Plan [clause 1 of this certificate]**
- **if a native vegetation set aside area applies**
- **clause 15 of this certificate if a property vegetation plan applies.**

Development Approvals:

The following development approvals or complying development certificates have been issued or recorded by Council since January 2019:

Application No	Description	Approval Date
Not applicable.		

Road Access in Non-Urban Areas:

Lot 125 DP 1297613	**Not applicable. The land is located in an urban area. Enquiries about roads can be made to Council at:** https://www.qprc.nsw.gov.au/Services/Roads-and-footpaths

Waste management:

Is the land within the boundary of a Council kerbside waste collection area?

Lot 125 DP 1297613	**The land is within the Bungendore North waste collection area.** https://www.qprc.nsw.gov.au/Waste-Environment-Sustainability/Waste/Check-my-bin-collection-day

Biodiversity:

Is the land identified as "Biodiversity" on the Terrestrial Biodiversity Map and is subject to clause 7.2 Terrestrial Biodiversity under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022*?

Lot 125 DP 1297613	**Yes.**

Drinking Water Catchments:

Is the land identified as "Drinking water catchment" on the Drinking Water Catchment Map and is subject to clause 7.3 Drinking water catchments under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022*?

Lot 125 DP 1297613	**No.**

Watercourse:

Is the land identified as "Watercourse" on the Riparian Lands and Watercourses Map and is subject to clause 7.4 Riparian land and watercourses under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022*?

Lot 125 DP 1297613 No.

Scenic Protection:

Is the land identified as "Scenic Protection Area" on the Scenic Protection Map and is subject to clause 7.14 Scenic Protection under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022*?

Lot 125 DP 1297613 No.

Land near HMAS Harman:

Is the land identified as within 2km of HMAS Harman and zoned E4 General Industrial and is subject to clause 7.17 Development near HMAS Harman under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022*?

Lot 125 DP 1297613 No.

Land near Arterial Roads:

Is the land identified as "Arterial Road Area" on the Local Clauses Map and is subject to clause 7.18 Development near arterial roads under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022*?

Lot 125 DP 1297613 No.

Old Cooma Road Googong Road Noise:

Is the land identified in the SLR Consulting Australia Pty Ltd report 670.10363.00960-R01.0-v1.2 dated 6 March 2017 as land affected by the predicted year 2031 road noise from Old Cooma Road Googong?

Lot 125 DP 1297613 No.

Goorooyaroo Unexploded Ordinance:

Is the land within the one kilometre buffer zone of the Goorooyaroo Nature Reserve?

Lot 125 DP 1297613 No.

Policy on keeping cats:

Is the land subject to the QPRC Cat Containment Area Policy (adopted on 26 April 2023) which requires residents with pet cats to keep them within the boundaries of their properties?

Lot 125 DP 1297613	**Yes. The cat containment rules apply to this land.**

Notes and disclaimer

1. The information in this certificate only relates to the real property identifier associated with the property and not to any licence or permissive occupancy that may be attached to and included in the property details contained in the description of the land.
2. The NSW *Environmental Planning and Assessment Act 1979* is referred to in this Certificate as 'the Act'.
3. This certificate contains information provided to Council by third parties and is as current as the latest information available to Council at the time of production of this document. Council does not warrant the accuracy of the information contained within the information provided by third parties and has not independently verified the information. It is strongly recommended that you contact the relevant third parties to confirm the accuracy of the information.

Checked: JB

Rebecca Ryan
Acting General Manager
Queanbeyan-Palerang Regional Council 09 October 2024

Site Photos

Project Ref: E37084PT Bungendore
Site Address: Birchfield Drive, Bungendore, NSW
Selected Site Photos Dated: 14 October 2024

Photograph 1: Looking north-east through the site from the south-west corner. Birchfield Drive in the right foreground, and newly installed drainage line in the left foreground.

Photograph 2: Looking south-east from central portion of the northern boundary.

Photographs 3: Example of surficial fill including ironstone and quartz gravels on site surface.

Appendix C: Laboratory Results Summary Tables

ABBREVIATIONS AND EXPLANATIONS

Abbreviations used in the Tables:

ABC:	Ambient Background Concentration
ACM:	Asbestos Containing Material
ADWG:	AustralianDrinking Water Guidelines
AF:	Asbestos Fines
ANZG	Australian and New Zealand Guidelines
B(a)P:	Benzo(a)pyrene
CEC:	Cation Exchange Capacity
CRC:	Cooperative Research Centre
CT:	Contaminant Threshold
EILs:	Ecological Investigation Levels
ESLs:	Ecological Screening Levels
FA:	Fibrous Asbestos
GIL:	Groundwater Investigation Levels
GSW:	General Solid Waste
HILs:	Health Investigation Levels
HSLs:	Health Screening Levels
HSL-SSA:	Health Screening Level-SiteSpecific Assessment
kg/L	kilograms per litre
NA:	Not Analysed
NC:	Not Calculated
NEPM:	National Environmental Protection Measure
NHMRC:	National Health and Medical Research Council
NL:	Not Limiting
NSL:	No Set Limit
OCP:	Organochlorine Pesticides
OPP:	Organophosphorus Pesticides
PAHs:	Polycyclic Aromatic Hydrocarbons
%w/w:	weight per weight
ppm:	Parts per million
PCBs:	Polychlorinated Biphenyls
PCE:	Perchloroethylene (Tetrachloroethylene or Teterachloroethene)
pH_{KCL} :	pH of filtered 1:20, 1M KCL extract, shaken overnight
pH_{ox} :	pH of filtered 1:20 1M KCl after peroxide digestion
PQL:	Practical Quantitation Limit
RS:	Rinsate Sample
RSL:	Regional Screening Levels
RSW:	Restricted Solid Waste
SAC:	Site Assessment Criteria
SCC:	Specific Contaminant Concentration
S_{Cr}:	Chromium reducible sulfur
S_{POS}:	Peroxide oxidisable Sulfur
SSA:	Site Specific Assessment
SSHSLs:	Site Specific Health Screening Levels
TAA:	Total Actual Acidity in 1M KCL extract titrated to pH6.5
TB:	Trip Blank
TCA:	1,1,1 Trichloroethane (methyl chloroform)
TCE:	Trichloroethylene (Trichloroethene)
TCLP:	Toxicity Characteristics Leaching Procedure
TPA:	Total Potential Acidity, 1M KCL peroxide digest
TS:	Trip Spike
TRH:	Total Recoverable Hydrocarbons
TSA:	Total Sulfide Acidity (TPA-TAA)
UCL:	Upper Level Confidence Limit on Mean Valu
USEPA	United States Environmental Protection Agency
VOCC:	Volatile Organic Chlorinated Compounds
WHO:	World Health Organisation

Table Specific Explanations:

HIL Tables:

- The chromium results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.
- Carcinogenic PAHs is a toxicity weighted sum of analyte concentrations for a specific list of PAH compounds relative to B(a)P. It is also refered to as the B(a)P Toxic Equivalence Quotient (TEQ).
- Statistical calculations are undertaken using ProUCL (USEPA). Statistical calculation is usually undertaken using data from fill samples.

EIL/ESL Table:

- ABC Values for selected metals have been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with low traffic have been quoted).

Waste Classification and TCLP Table:

- Data assessed using the NSW EPA Waste Classification Guidelines, Part 1: Classifying Waste (2014).
- The assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion.
- Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde.

QA/QC Table:

- Field blank, Inter and Intra laboratory duplicate results are reported in mg/kg.
- Trip spike results are reported as percentage recovery.
- Field rinsate results are reported in µg/L.

TABLE S1
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013.
HIL-C: 'Public open space; secondary schools; and footpaths'

All data in mg/kg unless stated otherwise			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	Carcinogenic PAHs	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos		
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC)			300	90	300	17000	600	80	1200	30000	300	3	10	340	400	10	70	400	10	250	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH1	0-0.2	Silty Clay	<4	<0.4	**11**	**4**	**9**	<0.1	**5**	**6**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH1 - [LAB_DUP]	0-0.2	Silty Clay	<4	<0.4	**14**	**5**	**11**	<0.1	**6**	**7**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH2	0-0.2	Silty Clay	**4**	<0.4	**43**	**10**	**16**	<0.1	**10**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	0-0.2	Silty Clay	**5**	<0.4	**46**	**8**	**23**	<0.1	**11**	**9**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH3	0.8-0.95	Silty Clay	**4**	<0.4	**32**	**16**	**11**	<0.1	**19**	**16**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH3 - [LAB DUP]	0.8-0.95	Silty Clay	**4**	<0.4	**32**	**17**	**11**	<0.1	**19**	**16**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH4	0-0.2	F: Silty Clay	<4	<0.4	**34**	**6**	**16**	<0.1	**9**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH4	0.8-0.95	Silty Clay	**5**	<0.4	**39**	**13**	**10**	**0.1**	**12**	**14**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH5	0-0.2	Silty Clay	**7**	<0.4	**47**	**4**	**19**	<0.1	**9**	**11**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH6	0-0.2	Silty Clay	<4	<0.4	**34**	**5**	**15**	<0.1	**12**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH7	0-0.2	Silty Clay	**4**	<0.4	**27**	**7**	**14**	<0.1	**8**	**13**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH8	0-0.2	Silty Clay	**7**	<0.4	**47**	**11**	**21**	<0.1	**14**	**18**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH9	0-0.2	Silty Clay	**7**	<0.4	**55**	**6**	**21**	<0.1	**10**	**20**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH9	0.8-0.95	Silty Clay	<4	<0.4	**19**	**4**	**5**	<0.1	**5**	**7**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH10	0-0.2	F: Silty Clay	<4	<0.4	**18**	**9**	**13**	<0.1	**10**	**12**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH10	0.8-0.95	F: Silty Clay	<4	<0.4	**29**	**10**	**19**	<0.1	**15**	**9**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH11	0-0.4	Silty Clay	**5**	<0.4	**46**	**10**	**14**	<0.1	**16**	**20**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH11 - [LAB_DUP]	0-0.4	Silty Clay	**6**	<0.4	**47**	**10**	**17**	<0.1	**13**	**14**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH11	0.7-0.95	Silty Clay	**9**	<0.4	**33**	**17**	**11**	<0.1	**18**	**14**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH12	0-0.2	Silty Clay	<4	<0.4	**25**	**4**	**11**	<0.1	**5**	**8**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH13	0-0.2	Silty Clay	**5**	<0.4	**26**	**8**	**10**	<0.1	**13**	**18**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH14	0-0.2	Silty Clay	**6**	<0.4	**33**	**25**	**12**	<0.1	**16**	**15**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH15	0-0.2	Silty Clay	<4	<0.4	**19**	**8**	**7**	<0.1	**7**	**9**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH16	0-0.2	F: Silty Clay	<4	<0.4	**23**	**7**	**11**	<0.1	**9**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH16	0.8-0.95	Silty Clay	**5**	<0.4	**38**	**20**	**15**	<0.1	**14**	**16**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH17	0-0.2	Silty Clay	**7**	<0.4	**42**	**11**	**21**	<0.1	**17**	**20**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH17	0.8-0.95	Silty Clay	**5**	<0.4	**30**	**26**	**12**	<0.1	**25**	**29**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH18	0-0.2	Silty Clay	**4**	<0.4	**30**	**8**	**8**	<0.1	**10**	**9**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH19	0-0.2	Silty Clay	<4	<0.4	**26**	**6**	**14**	<0.1	**8**	**7**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH20	0-0.2	Silty Clay	<4	<0.4	**25**	**11**	**15**	<0.1	**8**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH21	0-0.2	Silty Clay	<4	<0.4	**17**	**4**	**8**	<0.1	**4**	**6**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH21 - [LAB_DUP]	0-0.2	Silty Clay	<4	<0.4	**25**	**3**	**11**	<0.1	**6**	**8**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH22	0-0.2	Silty Clay	**7**	<0.4	**38**	**16**	**11**	<0.1	**21**	**18**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH23	0-0.2	Silty Clay	<4	<0.4	**30**	**13**	**12**	<0.1	**8**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH24	0-0.2	Silty Clay	**4**	<0.4	**29**	**22**	**16**	<0.1	**15**	**20**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH25	0-0.2	Silty Clay	**7**	<0.4	**31**	**20**	**10**	<0.1	**18**	**18**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH26	0-0.2	Silty Clay	<4	<0.4	**22**	**7**	**13**	<0.1	**7**	**12**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH27	0-0.2	Silty Clay	<4	<0.4	**21**	**7**	**12**	<0.1	**6**	**9**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH28	0-0.2	Silty Clay	**6**	<0.4	**33**	**15**	**15**	<0.1	**14**	**13**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH28	0.8-0.9	XW: Sandstone	**8**	<0.4	**39**	**30**	**16**	**0.1**	**18**	**23**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH29	0-0.2	Silty Clay	**4**	<0.4	**33**	**10**	**25**	<0.1	**13**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH30	0-0.2	Silty Clay	**6**	<0.4	**39**	**19**	**15**	<0.1	**17**	**12**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH31	0-0.2	Silty Clay	<4	<0.4	**32**	**12**	**19**	<0.1	**13**	**12**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH31 - [LAB_DUP]	0-0.2	Silty Clay	<4	<0.4	**24**	**11**	**14**	<0.1	**12**	**12**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
BH32	0-0.2	Silty Clay	**4**	<0.4	**25**	**9**	**15**	<0.1	**9**	**13**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH33	0-0.2	Silty Clay	<4	<0.4	**23**	**2**	**11**	<0.1	**4**	**6**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH34	0-0.2	F: Silty Clay	**6**	<0.4	**33**	**13**	**21**	<0.1	**14**	**13**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
BH34	0.8-0.95	Silty Clay	**4**	<0.4	**31**	**22**	**12**	<0.1	**24**	**16**	<0.05	<0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH35	0-0.2	Silty Clay	**4**	<0.4	**31**	**13**	**14**	<0.1	**9**	**20**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Not Detected
SDUP1	BH11 (0-0.4)	Silty Clay	**4**	<0.4	**34**	**7**	**13**	<0.1	**12**	**15**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP2	BH13 (0-0.2)	Silty Clay	<4	<0.4	**23**	**7.7**	**9.4**	<0.1	**9.2**	**18**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP3	BH17 (0-0.2)	Silty Clay	**7**	<0.4	**42**	**14**	**19**	<0.1	**21**	**26**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
SDUP4	BH2 (0-0.2)	Silty Clay	<4	<0.4	**24**	**6.9**	**12**	<0.1	**6.1**	**10**	<0.05	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NA
Total Number of Samples			53	53	53	53	53	53	53	53	53	53	43	43	43	43	43	43	43	43	43	35
Maximum Value			9	<PQL	55	30	25	0.1	25	29	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Not Detected

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**
Asbestos Detected — **Detected**

JKEnvironments

TABLE S2
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	$>C_{10}$-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Field PID Measurement
PQL - Envirolab Services					25	50	0.2	0.5	1	1	1	ppm
NEPM 2013 HSL Land Use Category					**HSL-A/B: LOW/HIGH DENSITY RESIDENTIAL**							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH1	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH1 - [LAB_DUP]	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH2	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH3	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH3	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH3 - [LAB DUP]	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH4	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH4	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH5	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH6	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH7	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH8	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH9	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH9	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH10	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH10	0.8-0.95	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH11	0-0.4	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH11 - [LAB_DUP]	0-0.4	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH11	0.7-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH12	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH13	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH14	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH15	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH16	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH16	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH17	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH17	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH18	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH19	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH20	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH21	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH21 - [LAB_DUP]	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH22	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH23	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH24	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH25	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH26	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH27	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH28	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH28	0.8-0.9	XW: Sandstone	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH29	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH30	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH31	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH31 - [LAB_DUP]	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH32	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH33	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH34	0-0.2	F: Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH34	0.8-0.95	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
BH35	0-0.2	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
SDUP1	BH11 (0-0.4)	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
SDUP2	BH13 (0-0.2)	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
SDUP3	BH17 (0-0.2)	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
SDUP4	BH2 (0-0.2)	Silty Clay	0m to <1m	Sand	<25	<50	<0.2	<0.5	<1	<1	<1	-
Total Number of Samples					53	53	53	53	53	53	53	0
Maximum Value					<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**
The guideline corresponding to the concentration above the SAC is highlighted in grey in the Site Assessment Criteria Table below

HSL SOIL ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Sample Description	Depth Category	Soil Category	C_6-C_{10} (F1)	$>C_{10}$-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
BH1	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH1 - [LAB_DUP]	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH2	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH3 - [LAB DUP]	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH4	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH5	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH6	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH7	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH8	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH9	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH9	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH10	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH10	0.8-0.95	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH11	0-0.4	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH11 - [LAB_DUP]	0-0.4	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH11	0.7-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH12	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH13	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH14	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH15	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH16	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH16	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH17	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH17	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH18	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH19	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH20	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH21	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH21 - [LAB_DUP]	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH22	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH23	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH24	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH25	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH26	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH27	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH28	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH28	0.8-0.9	XW: Sandstone	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH29	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH30	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH31	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH31 - [LAB_DUP]	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH32	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH33	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH34	0-0.2	F: Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH34	0.8-0.95	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
BH35	0-0.2	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP1	BH11 (0-0.4)	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP2	BH13 (0-0.2)	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP3	BH17 (0-0.2)	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3
SDUP4	BH2 (0-0.2)	Silty Clay	0m to <1m	Sand	45	110	0.5	160	55	40	3

TABLE S3
SOIL LABORATORY RESULTS COMPARED TO MANAGEMENT LIMITS
All data in mg/kg unless stated otherwise

			C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
PQL - Envirolab Services			25	50	100	100
NEPM 2013 Land Use Category			**RESIDENTIAL, PARKLAND & PUBLIC OPEN SPACE**			
Sample Reference	**Sample Depth**	**Soil Texture**				
BH1	0-0.2	Fine	<25	<50	<100	<100
BH1 - [LAB_DUP]	0-0.2	Fine	<25	<50	<100	<100
BH2	0-0.2	Fine	<25	<50	<100	<100
BH3	0-0.2	Fine	<25	<50	<100	<100
BH3	0.8-0.95	Fine	<25	<50	<100	<100
BH3 - [LAB DUP]	0.8-0.95	Fine	<25	<50	<100	<100
BH4	0-0.2	Fine	<25	<50	<100	<100
BH4	0.8-0.95	Fine	<25	<50	<100	<100
BH5	0-0.2	Fine	<25	<50	<100	<100
BH6	0-0.2	Fine	<25	<50	<100	<100
BH7	0-0.2	Fine	<25	<50	<100	<100
BH8	0-0.2	Fine	<25	<50	<100	<100
BH9	0-0.2	Fine	<25	<50	<100	<100
BH9	0.8-0.95	Fine	<25	<50	<100	<100
BH10	0-0.2	Fine	<25	<50	<100	<100
BH10	0.8-0.95	Fine	<25	<50	<100	<100
BH11	0-0.4	Fine	<25	<50	<100	<100
BH11 - [LAB_DUP]	0-0.4	Fine	<25	<50	<100	<100
BH11	0.7-0.95	Fine	<25	<50	<100	<100
BH12	0-0.2	Fine	<25	<50	<100	<100
BH13	0-0.2	Fine	<25	<50	<100	<100
BH14	0-0.2	Fine	<25	<50	<100	<100
BH15	0-0.2	Fine	<25	<50	<100	<100
BH16	0-0.2	Fine	<25	<50	<100	<100
BH16	0.8-0.95	Fine	<25	<50	<100	<100
BH17	0-0.2	Fine	<25	<50	<100	<100
BH17	0.8-0.95	Fine	<25	<50	<100	<100
BH18	0-0.2	Fine	<25	<50	<100	<100
BH19	0-0.2	Fine	<25	<50	<100	<100
BH20	0-0.2	Fine	<25	<50	<100	<100
BH21	0-0.2	Fine	<25	<50	<100	<100
BH21 - [LAB_DUP]	0-0.2	Fine	<25	<50	<100	<100
BH22	0-0.2	Fine	<25	<50	<100	<100
BH23	0-0.2	Fine	<25	<50	<100	<100
BH24	0-0.2	Fine	<25	<50	<100	<100
BH25	0-0.2	Fine	<25	<50	<100	<100
BH26	0-0.2	Fine	<25	<50	<100	<100
BH27	0-0.2	Fine	<25	<50	<100	<100
BH28	0-0.2	Fine	<25	<50	<100	<100
BH28	0.8-0.9	Fine	<25	<50	<100	<100
BH29	0-0.2	Fine	<25	<50	<100	<100
BH30	0-0.2	Fine	<25	<50	<100	<100
BH31	0-0.2	Fine	<25	<50	<100	<100
BH31 - [LAB_DUP]	0-0.2	Fine	<25	<50	<100	<100
BH32	0-0.2	Fine	<25	<50	<100	<100
BH33	0-0.2	Fine	<25	<50	<100	<100
BH34	0-0.2	Fine	<25	<50	<100	<100
BH34	0.8-0.95	Fine	<25	<50	<100	<100
BH35	0-0.2	Fine	<25	<50	<100	<100
SDUP1	BH11 (0-0.4)	Fine	<25	<50	<100	<100
SDUP2	BH13 (0-0.2)	Fine	<25	<50	<100	<100
SDUP3	BH17 (0-0.2)	Fine	<25	<50	<100	<100
SDUP4	BH2 (0-0.2)	Fine	<25	<50	<100	<100
Total Number of Samples			53	53	53	53
Maximum Value			<PQL	<PQL	<PQL	<PQL

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**

MANAGEMENT LIMIT ASSESSMENT CRITERIA

Sample Reference	**Sample Depth**	**Soil Texture**	C_6-C_{10} (F1) plus BTEX	>C_{10}-C_{16} (F2) plus napthalene	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)
BH1	0-0.2	Fine	800	1000	3500	10000
BH1 - [LAB_DUP]	0-0.2	Fine	800	1000	3500	10000
BH2	0-0.2	Fine	800	1000	3500	10000
BH3	0-0.2	Fine	800	1000	3500	10000
BH3	0.8-0.95	Fine	800	1000	3500	10000
BH3 - [LAB DUP]	0.8-0.95	Fine	800	1000	3500	10000
BH4	0-0.2	Fine	800	1000	3500	10000
BH4	0.8-0.95	Fine	800	1000	3500	10000
BH5	0-0.2	Fine	800	1000	3500	10000
BH6	0-0.2	Fine	800	1000	3500	10000
BH7	0-0.2	Fine	800	1000	3500	10000
BH8	0-0.2	Fine	800	1000	3500	10000
BH9	0-0.2	Fine	800	1000	3500	10000
BH9	0.8-0.95	Fine	800	1000	3500	10000
BH10	0-0.2	Fine	800	1000	3500	10000
BH10	0.8-0.95	Fine	800	1000	3500	10000
BH11	0-0.4	Fine	800	1000	3500	10000
BH11 - [LAB_DUP]	0-0.4	Fine	800	1000	3500	10000
BH11	0.7-0.95	Fine	800	1000	3500	10000
BH12	0-0.2	Fine	800	1000	3500	10000
BH13	0-0.2	Fine	800	1000	3500	10000
BH14	0-0.2	Fine	800	1000	3500	10000
BH15	0-0.2	Fine	800	1000	3500	10000
BH16	0-0.2	Fine	800	1000	3500	10000
BH16	0.8-0.95	Fine	800	1000	3500	10000
BH17	0-0.2	Fine	800	1000	3500	10000
BH17	0.8-0.95	Fine	800	1000	3500	10000
BH18	0-0.2	Fine	800	1000	3500	10000
BH19	0-0.2	Fine	800	1000	3500	10000
BH20	0-0.2	Fine	800	1000	3500	10000
BH21	0-0.2	Fine	800	1000	3500	10000
BH21 - [LAB_DUP]	0-0.2	Fine	800	1000	3500	10000
BH22	0-0.2	Fine	800	1000	3500	10000
BH23	0-0.2	Fine	800	1000	3500	10000
BH24	0-0.2	Fine	800	1000	3500	10000
BH25	0-0.2	Fine	800	1000	3500	10000
BH26	0-0.2	Fine	800	1000	3500	10000
BH27	0-0.2	Fine	800	1000	3500	10000
BH28	0-0.2	Fine	800	1000	3500	10000
BH28	0.8-0.9	Fine	800	1000	3500	10000
BH29	0-0.2	Fine	800	1000	3500	10000
BH30	0-0.2	Fine	800	1000	3500	10000
BH31	0-0.2	Fine	800	1000	3500	10000
BH31 - [LAB_DUP]	0-0.2	Fine	800	1000	3500	10000
BH32	0-0.2	Fine	800	1000	3500	10000
BH33	0-0.2	Fine	800	1000	3500	10000
BH34	0-0.2	Fine	800	1000	3500	10000
BH34	0.8-0.95	Fine	800	1000	3500	10000
BH35	0-0.2	Fine	800	1000	3500	10000
SDUP1	BH11 (0-0.4)	Fine	800	1000	3500	10000
SDUP2	BH13 (0-0.2)	Fine	800	1000	3500	10000
SDUP3	BH17 (0-0.2)	Fine	800	1000	3500	10000
SDUP4	BH2 (0-0.2)	Fine	800	1000	3500	10000

TABLE S4
SOIL LABORATORY RESULTS COMPARED T0 DIRECT CONTACT CRITERIA
All data in mg/kg unless stated otherwise

Analyte		C_6-C_{10}	>C_{10}-C_{16}	>C_{16}-C_{34}	>C_{34}-C_{40}	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID
PQL - Envirolab Services		25	50	100	100	0.2	0.5	1	1	1	
CRC 2011 -Direct contact Criteria		82,000	62,000	85,000	120,000	1,100	120,000	85,000	130,000	29,000	
Site Use		**Intrusive Maintenance Worker - DIRECT SOIL CONTACT**									
Sample Reference	**Sample Depth**										
BH1	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH1 - [LAB_DUP]	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH3	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH3	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH3 - [LAB DUP]	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH4	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH4	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH5	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH6	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH7	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH8	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH9	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH9	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH10	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH10	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH11	0-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH11 - [LAB_DUP]	0-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH11	0.7-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH12	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH13	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH14	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH15	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH16	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH16	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH17	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH17	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH18	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH19	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH20	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH21	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH21 - [LAB_DUP]	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH22	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH23	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH24	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH25	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH26	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH27	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH28	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH28	0.8-0.9	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH29	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH30	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH31	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH31 - [LAB_DUP]	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH32	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH33	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH34	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH34	0.8-0.95	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
BH35	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
SDUP1	BH11 (0-0.4)	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
SDUP2	BH13 (0-0.2m)	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
SDUP3	BH17 (0-0.2)	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
SDUP4	BH2 (0-0.2)	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<1	-
Total Number of Samples		53	53	53	53	53	53	53	53	53	0
Maximum Value		<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	NA

Concentration above the SAC **VALUE**
Concentration above the PQL **Bold**

TABLE S5
ASBESTOS QUANTIFICATION - FIELD OBSERVATIONS AND LABORATORY RESULTS
HSL-C:Public open space; secondary schools; and footpaths

FIELD DATA															LABORATORY DATA											
Date Sampled	Sample reference	Sample Depth	Visible ACM in top 100mm	Approx. Volume of Soil (L)	Soil Mass (g)	Mass ACM (g)	Mass Asbestos in ACM (g)	[Asbestos from ACM in soil] (%w/w)	Mass ACM <7mm (g)	Mass Asbestos in ACM <7mm (g)	[Asbestos from ACM <7mm in soil] (%w/w)	Mass FA (g)	Mass Asbestos in FA (g)	[Asbestos from FA in soil] (%w/w)	Lab Report Number	Sample refeference	Sample Depth	Sample Mass (g)	Asbestos ID in soil (AS4964) >0.1g/kg	Trace Analysis	Total Asbestos (g/kg)	Asbestos ID in soil <0.1g/kg	ACM >7mm Estimation (g)	FA and AF Estimation (g)	ACM >7mm Estimation %(w/w)	FA and AF Estimation %(w/w)
SAC			**No**					**0.02**			**0.001**			**0.001**											**0.02**	**0.001**
16/10/2024	BH1	0-0.2	No	>10	11,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH1	0-0.2	622.15	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH1	0.2-1.0	NA	<10	2,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
15/10/2024	BH2	0-0.2	No	>10	10,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH2	0-0.2	677.72	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/10/2024	BH3	0-0.2	No	>10	10,050	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH3	0-0.2	729.23	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/10/2024	BH4	0-0.2	No	>10	11,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH4	0-0.2	732.42	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/01/2024	BH5	0-0.2	No	>10	10,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH5	0-0.2	683	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/10/2024	BH6	0-0.2	No	>10	11,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH6	0-0.2	711.59	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/10/2024	BH7	0-0.2	No	>10	10,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH7	0-0.2	615.81	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
14/10/2024	BH8	0-0.2	No	>10	11,850	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH8	0-0.2	803.83	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/10/2024	BH9	0-0.2	No	>10	10,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH9	0-0.2	808.31	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH10	0-0.2	No	>10	11,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH10	0-0.2	689.63	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH10	0.2-1.4	NA	<10	2,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
14/10/2024	BH11	0-0.2	No	>10	10,050	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH11	0-0.4	818.17	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH12	0-0.2	No	>10	11,920	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH12	0-0.2	726.75	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
14/10/2024	BH13	0-0.2	No	>10	10,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH13	0-0.2	803.25	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH14	0-0.2	No	>10	12,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH14	0-0.2	797.03	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH15	0-0.2	No	>10	10,900	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH15	0-0.2	709.25	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH16	0-0.2	No	>10	10,700	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH16	0-0.2	699.51	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH16	0.2-0.8	NA	<10	3,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	--	--	--	--	--	--	--	--	--	--	--	--
15/10/2024	BH17	0-0.2	No	>10	11,470	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH17	0-0.2	668.93	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH18	0-0.2	No	>10	10,340	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH18	0-0.2	740.73	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
15/10/2024	BH19	0-0.2	No	>10	10,030	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH19	0-0.2	834.65	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH20	0-0.2	No	>10	10,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH20	0-0.2	830.18	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH21	0-0.2	No	>10	12,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH21	0-0.2	544.69	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH22	0-0.2	No	>10	14,600	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH22	0-0.2	722.46	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH23	0-0.2	No	>10	10,280	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH23	0-0.2	766.37	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH24	0-0.2	No	>10	12,400	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH24	0-0.2	630.07	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH25	0-0.2	No	>10	13,000	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH25	0-0.2	793.48	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH26	0-0.2	No	>10	10,200	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH26	0-0.2	371.57	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH27	0-0.2	No	>10	10,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH27	0-0.2	700.6	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
16/10/2024	BH28	0-0.2	No	>10	10,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH28	0-0.2	815.08	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH29	0-0.2	No	>10	12,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH29	0-0.2	583.46	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH30	0-0.2	No	>10	15,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH30	0-0.2	928.52	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH31	0-0.2	No	>10	11,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH31	0-0.2	693.99	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH32	0-0.2	No	>10	10,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH32	0-0.2	860.94	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH33	0-0.2	No	>10	11,500	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH33	0-0.2	732.51	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH34	0-0.2	No	>10	13,300	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH34	0-0.2	806.32	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001
17/10/2024	BH35	0-0.2	No	>10	12,800	No ACM observed	--	--	No ACM <7mm observed	--	--	No FA observed	--	--	364339	BH35	0-0.2	624.79	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected	<0.1	No visible asbestos detected	–	–	<0.01	<0.001

Concentration above the SAC **VALUE**

JKEnvironments

TABLE S6
SOIL LABORATORY RESULTS COMPARED TO NEPM 2013 EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																			
							AGED HEAVY METALS-EILs						EILs		ESLs								
				pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	1	0.1	25	50	100	100	0.2	0.5	1	1	0.05
Ambient Background Concentration (ABC)				-	-	-	NSL	8	18	104	5	77	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																				
BH1	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**11**	**4**	**9**	**5**	**6**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH1 - [LAB_DUP]	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**14**	**5**	**11**	**6**	**7**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH2	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**43**	**10**	**16**	**10**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0-0.2	Silty Clay	Fine	NA	NA	NA	**5**	**46**	**8**	**23**	**11**	**9**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3	0.8-0.95	Silty Clay	Fine	NA	NA	NA	**4**	**32**	**16**	**11**	**19**	**16**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH3 - [LAB DUP]	0.8-0.95	Silty Clay	Fine	NA	NA	NA	**4**	**32**	**17**	**11**	**19**	**16**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**34**	**6**	**16**	**9**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH4	0.8-0.95	Silty Clay	Fine	NA	NA	NA	**5**	**39**	**13**	**10**	**12**	**14**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH5	0-0.2	Silty Clay	Fine	NA	NA	NA	**7**	**47**	**4**	**19**	**9**	**11**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH6	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**34**	**5**	**15**	**12**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH7	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**27**	**7**	**14**	**8**	**13**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH8	0-0.2	Silty Clay	Fine	NA	NA	NA	**7**	**47**	**11**	**21**	**14**	**18**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH9	0-0.2	Silty Clay	Fine	NA	NA	NA	**7**	**55**	**6**	**21**	**10**	**20**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH9	0.8-0.95	Silty Clay	Fine	NA	NA	NA	<4	**19**	**4**	**5**	**5**	**7**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH10	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**18**	**9**	**13**	**10**	**12**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH10	0.8-0.95	F: Silty Clay	Fine	NA	NA	NA	<4	**29**	**10**	**19**	**15**	**9**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH11	0-0.4	Silty Clay	Fine	NA	NA	NA	**5**	**46**	**10**	**14**	**16**	**20**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH11 - [LAB_DUP]	0-0.4	Silty Clay	Fine	NA	NA	NA	**6**	**47**	**10**	**17**	**13**	**14**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH11	0.7-0.95	Silty Clay	Fine	NA	NA	NA	**9**	**33**	**17**	**11**	**18**	**14**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH12	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**25**	**4**	**11**	**5**	**8**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH13	0-0.2	Silty Clay	Fine	NA	NA	NA	**5**	**26**	**8**	**10**	**13**	**18**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH14	0-0.2	Silty Clay	Fine	NA	NA	NA	**6**	**33**	**25**	**12**	**16**	**15**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH15	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**19**	**8**	**7**	**7**	**9**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH16	0-0.2	F: Silty Clay	Fine	NA	NA	NA	<4	**23**	**7**	**11**	**9**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH16	0.8-0.95	Silty Clay	Fine	NA	NA	NA	**5**	**38**	**20**	**15**	**14**	**16**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH17	0-0.2	Silty Clay	Fine	NA	NA	NA	**7**	**42**	**11**	**21**	**17**	**20**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH17	0.8-0.95	Silty Clay	Fine	NA	NA	NA	**5**	**30**	**26**	**12**	**25**	**29**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH18	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**30**	**8**	**8**	**10**	**9**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH19	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**26**	**6**	**14**	**8**	**7**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH20	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**25**	**11**	**15**	**8**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH21	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**17**	**4**	**8**	**4**	**6**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH21 - [LAB_DUP]	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**25**	**3**	**11**	**6**	**8**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH22	0-0.2	Silty Clay	Fine	NA	NA	NA	**7**	**38**	**16**	**11**	**21**	**18**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH23	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**30**	**13**	**12**	**8**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH24	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**29**	**22**	**16**	**15**	**20**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH25	0-0.2	Silty Clay	Fine	NA	NA	NA	**7**	**31**	**20**	**10**	**18**	**18**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH26	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**22**	**7**	**13**	**7**	**12**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH27	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**21**	**7**	**12**	**6**	**9**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH28	0-0.2	Silty Clay	Fine	NA	NA	NA	**6**	**33**	**15**	**15**	**14**	**13**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH28	0.8-0.9	XW: Sandstone	Fine	NA	NA	NA	**8**	**39**	**30**	**16**	**18**	**23**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH29	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**33**	**10**	**25**	**13**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH30	0-0.2	Silty Clay	Fine	NA	NA	NA	**6**	**39**	**19**	**15**	**17**	**12**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH31	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**32**	**12**	**19**	**13**	**12**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH31 - [LAB_DUP]	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**24**	**11**	**14**	**12**	**12**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH32	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**25**	**9**	**15**	**9**	**13**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH33	0-0.2	Silty Clay	Fine	NA	NA	NA	<4	**23**	**2**	**11**	**4**	**6**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH34	0-0.2	F: Silty Clay	Fine	NA	NA	NA	**6**	**33**	**13**	**21**	**14**	**13**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH34	0.8-0.95	Silty Clay	Fine	NA	NA	NA	**4**	**31**	**22**	**12**	**24**	**16**	<1	NA	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
BH35	0-0.2	Silty Clay	Fine	NA	NA	NA	**4**	**31**	**13**	**14**	**9**	**20**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP1	BH11 (0-0.4)	Silty Clay	Fine	NA	NA	NA	**4**	**34**	**7**	**13**	**12**	**15**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP2	BH13 (0-0.2)	Silty Clay	Fine	NA	NA	NA	<4	**23**	**7.7**	**9.4**	**9.2**	**18**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP3	BH17 (0-0.2)	Silty Clay	Fine	NA	NA	NA	**7**	**42**	**14**	**19**	**21**	**26**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
SDUP4	BH2 (0-0.2)	Silty Clay	Fine	NA	NA	NA	<4	**24**	**6.9**	**12**	**6.1**	**10**	<1	<0.1	<25	<50	<100	<100	<0.2	<0.5	<1	<1	<0.05
Total Number of Samples				0	0	0	53	53	53	53	53	53	53	43	53	53	53	53	53	53	53	53	53
Maximum Value				NA	NA	NA	9	55	30	25	25	29	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL

Concentration above the SAC — **VALUE**
Concentration above the PQL — **Bold**
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

EIL AND ESL ASSESSMENT CRITERIA

Sample Reference	Sample Depth	Sample Description	Soil Texture	pH	CEC (cmolc/kg)	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
BH1	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH1 - [LAB_DUP]	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH2	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH3	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH3 - [LAB DUP]	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH4	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH4	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH5	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH6	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH7	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH8	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH9	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH9	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH10	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH10	0.8-0.95	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH11	0-0.4	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH11 - [LAB_DUP]	0-0.4	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH11	0.7-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH12	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH13	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH14	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH15	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH16	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH16	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH17	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH17	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH18	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH19	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH20	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH21	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH21 - [LAB_DUP]	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH22	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH23	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH24	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH25	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH26	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH27	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH28	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH28	0.8-0.9	XW: Sandstone	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH29	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH30	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH31	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH31 - [LAB_DUP]	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH32	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH33	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH34	0-0.2	F: Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
BH34	0.8-0.95	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	--	180	120	1300	5600	65	105	125	45	20
BH35	0-0.2	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP1	BH11 (0-0.4)	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP2	BH13 (0-0.2)	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP3	BH17 (0-0.2)	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20
SDUP4	BH2 (0-0.2)	Silty Clay	Fine	NA	NA	NA	100	200	80	1200	35	150	170	180	180	120	1300	5600	65	105	125	45	20

TABLE S7
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total	TRH					BTEX COMPOUNDS				ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful	Total Scheduled	PCBs	C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	50	0.2	0.5	1	1	100
General Solid Waste CT1			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	50	50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	50	50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	50	50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	50	50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																									
BH1	0-0.2	Silty Clay	<4	<0.4	**11**	**4**	**9**	<0.1	**5**	**6**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH1 - [LAB_DUP]	0-0.2	Silty Clay	<4	<0.4	**14**	**5**	**11**	<0.1	**6**	**7**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH2	0-0.2	Silty Clay	**4**	<0.4	**43**	**10**	**16**	<0.1	**10**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH3	0-0.2	Silty Clay	**5**	<0.4	**46**	**8**	**23**	<0.1	**11**	**9**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH3	0.8-0.95	Silty Clay	**4**	<0.4	**32**	**16**	**11**	<0.1	**19**	**16**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH3 - [LAB DUP]	0.8-0.95	Silty Clay	**4**	<0.4	**32**	**17**	**11**	<0.1	**19**	**16**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH4	0-0.2	F: Silty Clay	<4	<0.4	**34**	**6**	**16**	<0.1	**9**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH4	0.8-0.95	Silty Clay	**5**	<0.4	**39**	**13**	**10**	**0.1**	**12**	**14**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH5	0-0.2	Silty Clay	**7**	<0.4	**47**	**4**	**19**	<0.1	**9**	**11**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH6	0-0.2	Silty Clay	<4	<0.4	**34**	**5**	**15**	<0.1	**12**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH7	0-0.2	Silty Clay	**4**	<0.4	**27**	**7**	**14**	<0.1	**8**	**13**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH8	0-0.2	Silty Clay	**7**	<0.4	**47**	**11**	**21**	<0.1	**14**	**18**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH9	0-0.2	Silty Clay	**7**	<0.4	**55**	**6**	**21**	<0.1	**10**	**20**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH9	0.8-0.95	Silty Clay	<4	<0.4	**19**	**4**	**5**	<0.1	**5**	**7**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH10	0-0.2	F: Silty Clay	<4	<0.4	**18**	**9**	**13**	<0.1	**10**	**12**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH10	0.8-0.95	F: Silty Clay	<4	<0.4	**29**	**10**	**19**	<0.1	**15**	**9**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH11	0-0.4	Silty Clay	**5**	<0.4	**46**	**10**	**14**	<0.1	**16**	**20**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH11 - [LAB_DUP]	0-0.4	Silty Clay	**6**	<0.4	**47**	**10**	**17**	<0.1	**13**	**14**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH11	0.7-0.95	Silty Clay	**9**	<0.4	**33**	**17**	**11**	<0.1	**18**	**14**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH12	0-0.2	Silty Clay	<4	<0.4	**25**	**4**	**11**	<0.1	**5**	**8**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH13	0-0.2	Silty Clay	**5**	<0.4	**26**	**8**	**10**	<0.1	**13**	**18**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH14	0-0.2	Silty Clay	**6**	<0.4	**33**	**25**	**12**	<0.1	**16**	**15**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH15	0-0.2	Silty Clay	<4	<0.4	**19**	**8**	**7**	<0.1	**7**	**9**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH16	0-0.2	F: Silty Clay	<4	<0.4	**23**	**7**	**11**	<0.1	**9**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH16	0.8-0.95	Silty Clay	**5**	<0.4	**38**	**20**	**15**	<0.1	**14**	**16**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH17	0-0.2	Silty Clay	**7**	<0.4	**42**	**11**	**21**	<0.1	**17**	**20**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH17	0.8-0.95	Silty Clay	**5**	<0.4	**30**	**26**	**12**	<0.1	**25**	**29**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH18	0-0.2	Silty Clay	**4**	<0.4	**30**	**8**	**8**	<0.1	**10**	**9**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH19	0-0.2	Silty Clay	<4	<0.4	**26**	**6**	**14**	<0.1	**8**	**7**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH20	0-0.2	Silty Clay	<4	<0.4	**25**	**11**	**15**	<0.1	**8**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH21	0-0.2	Silty Clay	<4	<0.4	**17**	**4**	**8**	<0.1	**4**	**6**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH21 - [LAB_DUP]	0-0.2	Silty Clay	<4	<0.4	**25**	**3**	**11**	<0.1	**6**	**8**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH22	0-0.2	Silty Clay	**7**	<0.4	**38**	**16**	**11**	<0.1	**21**	**18**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH23	0-0.2	Silty Clay	<4	<0.4	**30**	**13**	**12**	<0.1	**8**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH24	0-0.2	Silty Clay	**4**	<0.4	**29**	**22**	**16**	<0.1	**15**	**20**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH25	0-0.2	Silty Clay	**7**	<0.4	**31**	**20**	**10**	<0.1	**18**	**18**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH26	0-0.2	Silty Clay	<4	<0.4	**22**	**7**	**13**	<0.1	**7**	**12**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH27	0-0.2	Silty Clay	<4	<0.4	**21**	**7**	**12**	<0.1	**6**	**9**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH28	0-0.2	Silty Clay	**6**	<0.4	**33**	**15**	**15**	<0.1	**14**	**13**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH28	0.8-0.9	XW: Sandstone	**8**	<0.4	**39**	**30**	**16**	**0.1**	**18**	**23**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH29	0-0.2	Silty Clay	**4**	<0.4	**33**	**10**	**25**	<0.1	**13**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH30	0-0.2	Silty Clay	**6**	<0.4	**39**	**19**	**15**	<0.1	**17**	**12**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH31	0-0.2	Silty Clay	<4	<0.4	**32**	**12**	**19**	<0.1	**13**	**12**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH31 - [LAB_DUP]	0-0.2	Silty Clay	<4	<0.4	**24**	**11**	**14**	<0.1	**12**	**12**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH32	0-0.2	Silty Clay	**4**	<0.4	**25**	**9**	**15**	<0.1	**9**	**13**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH33	0-0.2	Silty Clay	<4	<0.4	**23**	**2**	**11**	<0.1	**4**	**6**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH34	0-0.2	F: Silty Clay	**6**	<0.4	**33**	**13**	**21**	<0.1	**14**	**13**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
BH34	0.8-0.95	Silty Clay	**4**	<0.4	**31**	**22**	**12**	<0.1	**24**	**16**	<0.05	<0.05	NA	NA	NA	NA	NA	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
BH35	0-0.2	Silty Clay	**4**	<0.4	**31**	**13**	**14**	<0.1	**9**	**20**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	Not Detected
SDUP1	BH11 (0-0.4)	Silty Clay	**4**	<0.4	**34**	**7**	**13**	<0.1	**12**	**15**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP2	BH13 (0-0.2)	Silty Clay	<4	<0.4	**23**	**7.7**	**9.4**	<0.1	**9.2**	**18**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP3	BH17 (0-0.2)	Silty Clay	**7**	<0.4	**42**	**14**	**19**	<0.1	**21**	**26**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
SDUP4	BH2 (0-0.2)	Silty Clay	<4	<0.4	**24**	**6.9**	**12**	<0.1	**6.1**	**10**	<0.05	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<25	<50	<100	<100	<50	<0.2	<0.5	<1	<1	NA
Total Number of Samples			53	53	53	53	53	53	53	53	53	53	43	43	43	43	43	53	53	53	53	53	53	53	53	53	35
Maximum Value			9	<PQL	55	30	25	0.1	25	29	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	Not Detected

Concentration above the CT1 — **VALUE**
Concentration above SCC1 — **VALUE**
Concentration above the SCC2 — **VALUE**
Concentration above PQL — **Bold**
Asbestos Detected > Special Waste (asbestos) — **Detected**

Preliminary Site Investigation (PSI)
Birchfield Drive, Bungendore, NSW
E37084PT

JKEnvironments

TABLE Q1
SOIL QA/QC SUMMARY

			TRH C6 - C10	TRH >C10-C16	TRH >C16-C34	TRH >C34-C40	Benzene	Toluene	Ethylbenzene	m+p-xylene	o-Xylene	Naphthalene	Acenaphthylene	Acenaph-thene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j+k)fluoranthen	Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthra-cen	Benzo(g,h,i)perylene
	PQL Envirolab SYD		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1*	*2*	*1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.05*	*0.1*	*0.1*	*0.1*
	PQL Envirolab VIC		*25*	*50*	*100*	*100*	*0.2*	*0.5*	*1.0*	*2.0*	*1.0*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*0.2*	*0.1*	*0.1*	*0.1*	*0.1*
Intra laboratory duplicate	BH11	0-0.4	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	SDUP1	BH11 (0-0.4)	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra laboratory duplicate	BH17	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	SDUP3	BH17 (0-0.2)	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH13	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	SDUP2	BH13 (0-0.2)	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH2	0-0.2	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	SDUP4	BH2 (0-0.2)	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TS 14/10/24	-	-	-	-	-	99%	100%	102%	102%	102%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Rinsate	FR1-SPT 17/10/24	µg/L	55	<50	<100	<100	<1	<1	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	<0.1	<0.1
Field Blank	TB 14/10/24	-	<25	<50	<100	<100	<0.2	<0.5	<1	<2	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1

			HCB	alpha- BHC	gamma- BHC	beta- BHC	Heptachlor	delta- BHC	Aldrin	Heptachlor Epoxide	Gamma- Chlordane	alpha- chlordane	Endosulfan I	pp- DDE	Dieldrin	Endrin	pp- DDD	Endosulfan II	pp- DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor
	PQL Envirolab SYD		*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*
	PQL Envirolab VIC		*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*
Intra laboratory duplicate	BH11	0-0.4	<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
	SDUP1	BH11 (0-0.4)	<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
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Intra laboratory duplicate	BH17	0-0.2	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP3	BH17 (0-0.2)	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH13	0-0.2	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP2	BH13 (0-0.2)	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Inter laboratory duplicate	BH2	0-0.2	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	SDUP4	BH2 (0-0.2)	<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	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc
Field Blank	TS 14/10/24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Rinsate	FR1-SPT 17/10/24	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Blank	TB 14/10/24	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

			Azinphos-methyl (Guthi	Bromophos-ethyl	Chlorpyriphos	Chlorpyriphos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenitrothion	Malathion	Parathion	Ronnel	Total PCBS	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	PQL Envirolab SYD		*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*	*4*	*0.4*	*1*	*1*	*1*	*0.1*	*1*	*1*
	PQL Envirolab VIC		*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*	*4.0*	*0.4*	*1.0*	*1.0*	*1.0*	*0.1*	*1.0*	*1.0*
Intra laboratory duplicate	BH11	0-0.4	<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	5	<0.4	46	10	14	<0.1	16	20
	SDUP1	BH11 (0-0.4)	<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	4	<0.4	34	7	13	<0.1	12	15
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	4.5	nc	40	8.5	13.5	nc	14	17.5
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	22%	nc	30%	35%	7%	nc	29%	29%
Intra laboratory duplicate	BH17	0-0.2	<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	7	<0.4	42	11	21	<0.1	17	20
	SDUP3	BH17 (0-0.2)	<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	7	<0.4	42	14	19	<0.1	21	26
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	7	nc	42	12.5	20	nc	19	23
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	0%	nc	0%	24%	10%	nc	21%	26%
Inter laboratory duplicate	BH13	0-0.2	<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	5	<0.4	26	8	10	<0.1	13	18
	SDUP2	BH13 (0-0.2)	<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	<4	<0.4	23	7.7	9.4	<0.1	9.2	18
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	3.5	nc	24.5	7.85	9.7	nc	11.1	18
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	86%	nc	12%	4%	6%	nc	34%	0%
Inter laboratory duplicate	BH2	0-0.2	<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	4	<0.4	43	10	16	<0.1	10	10
	SDUP4	BH2 (0-0.2)	<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	<4	<0.4	24	6.9	12	<0.1	6.1	10
	MEAN		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	3	nc	33.5	8.45	14	nc	8.05	10
	RPD %		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	67%	nc	57%	37%	29%	nc	48%	0%
Field Blank	TS 14/10/24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Field Rinsate	FR1-SPT 17/10/24	µg/L	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05	<0.01	<0.01	0.3	<0.03	<0.0005	<0.02	<0.02
Field Blank	TB 14/10/24	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<4	<0.4	<1	<1	<1	<0.1	<1	<1

Result outside of QA/QC acceptance criteria

Rinsate metals results in mg/L

Appendix D: Borehole Logs

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BOREHOLE LOG

Borehole No. 1

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 724.9 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION									CL-CI	Silty CLAY: low to medium plasticity, brown and grey, trace of fine to medium grained quartz and ironstone gravel.	w<PL	Hd		RESIDUAL SCREEN: 11.5kg 0-0.2m, NO FCF
					N = 30 12,12,18	724	1		CH	as above, but high plasticity and orange brown.			>600 >600 >600	SCREEN: 2.4kg 0.2-1.0m, NO FCF
									CL	Silty CLAY: low plasticity, grey and yellow brown.	w>PL	VSt		
					N = 28 6,8,20	723	2		CH	as above, but high plasticity, with fine to coarse grained quartz and ironstone gravel.		Hd	220 240 260 520 600 580	
						722	3		-	Extremely Weathered silty sandstone: silty CLAY, low plasticity, light grey.	XW	Hd		ABERCROMBIE FORMATION VERY LOW 'TC' BIT RESISTANCE
										Silty SANDSTONE: fine grained, light grey.	DW	M		MODERATE RESISTANCE
						721	4			END OF BOREHOLE AT 3.70 m				'TC' BIT REFUSAL GROUNDWATER MONITORING WELL INSTALLED TO 3.7m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 0.7m TO 3.0m. CASING 0m TO 0.7m. 2mm SAND FILTER PACK 0m TO 0.5m. BENTONITE SEAL 0m TO 0.5m.
						720	5							
						719	6							
						718								

JKGeotechnics

BOREHOLE LOG

Borehole No. 2
1 / 1

SDUP4: 0-0.2m

Client: NSW DEPARTMENT OF EDUCATION
Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE
Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.3 m
Date: 15/10/24 **Datum:** AHD
Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■					735	0		CH	Silty CLAY: high plasticity, red brown and brown, trace of fine to medium grained ironstone and quartz gravel, and root fibres.	w<PL	Hd		GRASS COVER RESIDUAL SCREEN: 10.2kg 0-0.2m, NO FCF
	■			■	N = 13 4,7,6								>600 >600 >600	
	■					734	1			as above, but red brown and grey.				
				■	N = 21 5,9,12								>600 >600 >600	
						733	2							
							3			END OF BOREHOLE AT 3.00 m				
						732	4							
						731	5							
						730	6							
						729								

JKGeotechnics

BOREHOLE LOG

Borehole No. 3

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 737.1 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■					737			CH	Silty CLAY: high plasticity, red brown and brown, trace of fine to medium grained ironstone and quartz gravel, ash and root fibres.	w<PL	Hd		GRASS COVER RESIDUAL
				■	N = 16 5,8,8					as above, but without root fibres.			>600 >600 >600	SCREEN: 10.09kg 0-0.2m, NO FCF
						736	1			Silty CLAY: high plasticity, red brown, orange brown and grey, trace of fine to medium grained ironstone gravel.	w<PL			
				■	N = 14 3,5,9								>600 >600 >600	
						735	2							
				■					-	Extremely Weathered sandstone: silty CLAY, low plasticity, orange brown and grey, with fine to medium grained sand.	XW	(Hd)		ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
							3			END OF BOREHOLE AT 3.00 m				TOO FRIABLE FOR HP TESTING
						734								
						733	4							
						732	5							
						731	6							

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BOREHOLE LOG

Borehole No. 4

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.0 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION										FILL: Silty clay, high plasticity, red brown and brown, trace of fine to medium grained ironstone and quartz gravel, ash and root fibres.	w<PL			GRASS COVER SCREEN: 11.8kg 0-0.2m, NO FCF
					N = 16 5,7,9				CH	Silty CLAY: high plasticity, red brown and light brown, trace of fine to medium grained ironstone gravel.	w<PL	Hd	>600 >600 >600	RESIDUAL
						734	1			Silty CLAY: high plasticity, red brown and grey, trace of fine to medium grained ironstone and quartz gravel.				
					N = 21 5,7,14				-	Extremely Weathered sandstone: silty CLAY, low plasticity, orange brown and grey, trace of fine to medium grained quartz gravel.	XW			ABERCROMBIE FORMATION
						733	2			SANDSTONE: fine grained, orange brown and light grey.	DW	L - M		LOW 'TC' BIT RESISTANCE
												M		MODERATE TO HIGH RESISTANCE
										END OF BOREHOLE AT 2.70 m				HIGH RESISTANCE 'TC' BIT REFUSAL
						732	3							
						731	4							
						730	5							
						729	6							

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BOREHOLE LOG

Borehole No. 5

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 739.5 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■					739	0		CH	Silty CLAY: high plasticity, red brown and brown, trace of fine to medium grained quartz gravel, and root fibres.	w<PL	Hd		GRASS COVER RESIDUAL
				■	N = 8 3,4,4								>600 >600 >600	SCREEN: 10.5kg 0-0.2m, NO FCF
	■						1							
				■	N > 33 7,14,19/ 100mm REFUSAL	738			-	Extremely Weathered sandstone: silty CLAY, low plasticity, light grey and orange brown, trace of fine to medium grained quartz gravel.	XW	Hd	>600 >600 >600	ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
						737	2							
							3			END OF BOREHOLE AT 3.00 m				
						736	4							
						735	5							
						734	6							
						733								

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BOREHOLE LOG

Borehole No. 6 **1 / 1**

SDUP5: 0-0.2m

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.3 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						735			CH	Silty CLAY: high plasticity, red brown and brown, with fine to medium grained quartz gravel, trace of fine to medium grained ironstone gravel, and root fibres.	w<PL	Hd		GRASS COVER RESIDUAL SCREEN: 11.8kg 0-0.2m, NO FCF
					N = 15 6,8,7		1						>600 >600 >600	
						734				as above, but red brown, grey and orange brown, without root fibres.				
					N = 18 3,6,12								>600 >600 >600	
						733	2		-	Extremely Weathered sandstone: silty CLAY, low plasticity, orange brown and light grey, trace of fine to medium grained ironstone and quartz gravel.	XW	Hd	>600 >600 >600	ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
										SANDSTONE: fine to medium grained, orange brown and grey, with extremely weathered and iron indurated bands and fine to medium grained quartz gravel.	HW	L		
						732	3			SANDSTONE: fine to medium grained, light grey, grey and orange brown, trace of fine to medium grained quartz gravel.	DW	M		MODERATE RESISTANCE
						731	4							MODERATE TO HIGH RESISTANCE
							5							
						730						H		HIGH RESISTANCE
						729	6			END OF BOREHOLE AT 5.60 m				'TC' BIT REFUSAL GROUNDWATER MONITORING WELL INSTALLED TO 5.58m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 2.8m TO 5.58m. CASING 0m TO 2.8m. 2mm SAND FILTER PACK 2.5m TO 5.58m. BENTONITE SEAL 1.0m TO 2.5m. BACKFILLED WITH SAND TO THE SURFACE.

JKGeotechnics

BOREHOLE LOG

Borehole No. 7

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 738.8 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■			■					CH	Silty CLAY: high plasticity, red brown and orange brown, with fine to medium grained ironstone gravel.	w<PL	Hd		GRASS COVER RESIDUAL
				■	N = 18 3,4,14								>600 >600 >600	SCREEN: 10.7kg 0-0.2m, NO FCF
	■			■		738	1		-	Extremely Weathered sandstone: silty CLAY, low plasticity, light grey and orange brown, with fine to medium grained ironstone and quartz gravel.	XW	(Hd)		ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE TOO FRIABLE FOR HP TESTING
				■		737	2							
				■						SANDSTONE: fine to medium grained, light brown and orange brown, with fine to medium grained quartz gravel, and occasional extremely weathered and iron indurated bands.	DW	L - M		MODERATE RESISTANCE
						736	3							HIGH RESISTANCE
												M - H		
										END OF BOREHOLE AT 3.20 m				'TC' BIT REFUSAL
						735	4							
						734	5							
						733	6							
						732								

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BOREHOLE LOG

Borehole No. 8

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 743.8 m

Date: 14/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING									CI	Silty CLAY: medium plasticity, light brown and orange brown, trace of root fibres.	w~PL	Hd		GRASS COVER RESIDUAL
					N = 14 5,6,8	743	1						>600 >600 >600	SCREEN: 11.85kg 0-0.2m, NO FCF
										as above, but light brown, orange brown and grey.				
					N = 17 4,5,12	742	2		-	Extremely Weathered sandstone: silty CLAY, low plasticity, orange brown mottled light grey, trace of fine to medium grained quartz gravel.	XW	Hd	>600 >600 >600	TOO FRIABLE FOR HP TESTING ABERCROMBIE FORMATION
											DW	L		VERY LOW TO LOW 'TC' BIT RESISTANCE
						741	3			SANDSTONE: fine to medium grained, orange brown and light grey, trace of fine to medium grained quartz and ironstone gravel, and extremely weathered bands.				
						740	4					L - M		BANDED LOW TO MODERATE RESISTANCE
						739	5							
						738	6			REFER TO CORED BOREHOLE LOG				
						737								

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CORED BOREHOLE LOG

Borehole No. 8 **2 / 2**

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Core Size:** NMLC **R.L. Surface:** 743.8 m

Date: 14/10/24 **Inclination:** VERTICAL **Datum:** AHD

Plant Type: JK308 **Bearing:** N/A **Logged/Checked By:** K.R./A.B.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION (Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components)	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$ (VL -0.1, L -0.3, M -1, H -3, VH -10, EH)	DEFECT DETAILS: SPACING (mm) (600, 200, 60, 20)	DEFECT DETAILS: DESCRIPTION (Specific / General)	Formation
					START CORING AT 5.57m						
10% RETURN		738	6		NO CORE 1.10m						
		737	7		SANDSTONE: fine to medium grained, light brown and grey, bedded at 0-20°.	HW	L	0.20 0.20		(6.69m) XWS, 0°, 30 mm.t (6.77m) Be, 15°, P, S, Fe Sn (6.79m) Be, 15°, P, R, Fe Ct (7.12m) J, 30°, P, S, Clay Vn (7.30m) Be, 20°, P, R, Fe Ct (7.37m) Be, 0°, P, S, Clay Ct (7.39m) J, 80°, Un, S, Fe Ct (7.47m) J, 45°, P, S, Cn (7.52m) XWS, 0°, 60 mm.t (7.62m) Be, 0°, P, S, Fe Ct (7.73m) J, 25°, Un, S, Fe Ct	Abercrombie Formation
		736	8		as above, but light brown, grey and orange brown, with occasional iron staining.	MW	M	0.40		(7.87m) Be x 2, 5°, P, R, Fe Sn (7.91m) J, 30°, Ir, R, Fe Ct (8.00m) J, 80°, Ir, R, Fe Ct (8.10m) XWS, 70 mm.t (8.23m) Jh, 60°, Fe FILLED (8.28m) Be, 0°, P, S, Fe Ct (8.38m) J, 60°, P, S, Fe Ct (8.43m) Jh, 80°, Fe FILLED (8.49m) Be, 20°, Un, S, Fe Ct (8.55m) Be x 2, 15°, P, S, Fe Ct (8.63m) Be, 20°, P, S, Fe Ct	
		735	9					0.50			
							H	1.1		(8.86m) Jh, 70°, Fe FILLED (8.95m) J, 90°, P, S, Fe Ct (9.00m) XWS, 0°, 20 mm.t	
		734	10		SANDSTONE: fine to medium grained, grey, light grey and orange brown, bedded at 0-20°, with occasional quartz inclusions.			1.9		(9.17m) Be, 10°, P, S, Fe Ct (9.23m) XWS, 5°, 25 mm.t (9.33m) Be, 0°, P, S, Fe Ct (9.41m) J, 60°, P, S, Qz FILLED (9.47m) Ji, 30°, P, S, Fe Ct (9.50m) Be, 15°, P, R, Fe Ct (9.56m) Be, 5°, P, R, Fe Sn (9.66m) Be, 0°, P, S, Fe Ct (9.80m) J, 80°, P, S, Fe Ct	
							M	0.40		(9.96m) XWS, 0°, 40 mm.t (10.11m) J, 90°, P, S, Fe Ct (10.22m) J, 50°, P, R, Fe Sn (10.31m) Be, 15°, P, S, Fe Sn (10.36m) Cr, 5°, 50 mm.t (10.48m) Cr, 0°, 80 mm.t (10.55m) XWS, 0°, 60 mm.t	
		733	11		END OF BOREHOLE AT 10.59 m						
		732									

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

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BOREHOLE LOG

Borehole No. 9 **1 / 1**

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 740.9 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■													GRASS COVER
		■												RESIDUAL
				■										SCREEN: 10.8kg 0-0.2m, NO FCF
	■				N = 15 5,7,8	740	1		CH	Silty CLAY: high plasticity, red brown and brown, trace of fine to medium grained ironstone and quartz gravel.	w<PL	Hd	>600 >600 >600	
				■	N=SPT 15/ 100mm REFUSAL	739	2		-	Extremely Weathered sandstone: silty CLAY, low plasticity, light grey and orange brown, with fine to medium grained ironstone and quartz gravel.	XW	(Hd)		ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
										SANDSTONE: fine to medium grained, light brown and orange brown, with extremely weathered and iron indurated bands, trace of fine to medium grained ironstone and quartz gravel.	DW	L		LOW TO MODERATE RESISTANCE
				■		738	3					M		MODERATE RESISTANCE
										END OF BOREHOLE AT 3.00 m				
						737	4							
						736	5							
						735	6							
						734								

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BOREHOLE LOG

Borehole No. 10

1 / 1

SDUP6: 0-0.2m

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.9 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						735	1			FILL: Silty clay, high plasticity, red brown and brown, trace of fine to medium grained quartz gravel, ash and root fibres.	w<PL			GRASS COVER SCREEN: 11.6kg 0-0.2m, NO FCF SCREEN: 2.3kg 0.2-1.4m, NO FCF APPEARS WELL COMPACTED
					N = 13 3,6,7					FILL: Silty clay, low plasticity, dark brown, trace of fine grained ironstone gravel, fine to medium grained sand, and ash.				
					N > 25 7,15,10/ 50mm REFUSAL	734	2		CH	Silty CLAY: high plasticity, grey, red brown and orange brown, trace of fine to medium grained quartz and ironstone gravel.	w<PL	Hd	>600 >600 >600	RESIDUAL
					N > 23 4,9,14/ 100mm REFUSAL	733	3						490 470 530	
						732	4		-	Extremely Weathered sandstone: silty CLAY, low plasticity, orange brown and grey, with fine to medium grained ironstone gravel, trace of fine to medium grained quartz gravel.	XW DW	(Hd) M - H		ABERCROMBIE FORMATION LOW 'TC' BIT FORMATION
										SANDSTONE: fine to medium grained, orange brown and light grey, with fine to medium grained quartz gravel.				MODERATE TO HIGH RESISTANCE HIGH RESISTANCE 'TC' BIT REFUSAL
						731	5			END OF BOREHOLE AT 3.90 m				
						730	6							
						729								

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BOREHOLE LOG

Borehole No. 11

SDUP1: 0-0.2m

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 745.6 m

Date: 14/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING														
					N = 16 6,7,9	745	1		CH	Silty CLAY: high plasticity, orange brown, trace of fine to medium grained quartz and ironstone gravel.	w<PL	Hd	>600 >600 >600	RESIDUAL SCREEN: 10.05kg 0-0.2m, NO FCF
					N > 6 11,6/ 50mm REFUSAL	744	2		-	Extremely Weathered sandstone: sandy CLAY, low plasticity, light brown, fine to medium grained sand.	XW	(Hd)		ABERCROMBIE FORMATION
						743	3			SANDSTONE: fine to medium grained, light grey and light brown.	DW	L		VERY LOW 'TC' BIT RESISTANCE LOW RESISTANCE
						742	4			REFER TO CORED BOREHOLE LOG				
						741	5							
						740	6							
						739								

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CORED BOREHOLE LOG

Borehole No. 11 **2 / 2**

SDUP1: 0-0.2m

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Core Size:** NMLC **R.L. Surface:** 745.6 m

Date: 14/10/24 **Inclination:** VERTICAL **Datum:** AHD

Plant Type: JK500 **Bearing:** N/A **Logged/Checked By:** C.A.R./A.B.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$	DEFECT DETAILS SPACING (mm)	DESCRIPTION Type, orientation, defect shape and roughness, defect coatings and seams, openness and thickness Specific / General	Formation
					START CORING AT 4.00m			VL -0.1, L -0.3, M -1, H -3, VH -10, EH	600, 200, 60, 20		
					NO CORE 0.40m						
		741	5		SANDSTONE: fine to medium grained, light brown, grey and orange, with occasional quartz veins, foliated at 50-65°.	HW	L - M			(4.48m) J, 80°, P, R, Clay Sn (4.59m) J, 70°, P, R, Fe Ct (4.61m) Be, 50°, P, R, Fe Ct (4.74m) Ji, 30°, C (4.78m) J, 0°, P, R, Fe Ct (4.87m) J, 70°, P, R, Fe Ct (4.95m) J, 70°, P, R, Cn	Abercrombie Formation
		740						0.20		(5.18m) XWS, 5°, 10 mm.t (5.25m) J, 80°, P, R, Fe Ct (5.30m) XWS, 10°, 140 mm.t (5.48m) Be, 50°, P, R, Fe Sn (5.67m) Ji, 90°, P	
					NO CORE 0.10m						
90% RETURN		739	6 7		SANDSTONE: fine to medium grained, light brown, grey and orange, with occasional quartz veins, foliated at 50-65°.	HW	M	0.60 0.40		(5.96-6.33m) Jh, 80°, P (6.20m) J, 30°, P, R, Fe Sn (6.40m) J x 3, 40 - 60°, P, R, Fe Ct (6.60m) Be, 65°, P (6.81m) Be, 50°, P, R, Fe Sn (6.92m) Jh, 40°, P (7.00m) J, 45°, P, R, Qz FILLED (7.12m) Be x 2, 50°, P, R, Clay Ct, 1 mm.t (7.20m) Be, 55°, P, R, Fe Ct (7.27m) Be, 50°, P, R, Fe FILLED, 3 mm.t	Abercrombie Formation
		738			as above, but foliated at 30-40°.			0.60 0.50		(7.48m) J, 5°, P, R (7.56m) Be, 40°, P, R, Fe Ct (7.64m) Be, 40°, P, R, Fe Ct (7.72m) J, 50°, C, R, Fe Ct (7.80m) Be, 40°, P, R, Fe Ct	
			8		SANDSTONE: fine to medium grained, light grey, orange brown and dark brown, with occasional quartz veins, foliated at 30-55°.		L	0.20 0.080		(7.94m) J, 20°, P, R, Cn (8.00m) Be, 30°, P, R, Fe Ct	
		737						0.30		(8.69m) XWS, 30°, 10 mm.t	
			9							(8.86m) Be, 35°, P, R, Clay (8.89m) J, 55°, P, R, Fe Ct, 5 mm.t (9.03m) J, 90°, Ir, R, Fe Sn (9.16m) J x 2, 70°, P, R, Clay Ct (9.31m) J, 30°, P, R, Fe Ct	
		736						0.30		(9.50m) Ji, 0°, Ir/P, R, Fe Ct	
			10					0.20		(9.71m) Be, 30°, P, R, Fe Sn (9.84m) Be, 45°, P, R, Fe Sn (9.95m) J x 2, 45°, P, R, Cn	
					END OF BOREHOLE AT 10.00 m						
		735									

JK 9.02.4 LIB:GLB Log JK CORED BOREHOLE - MASTER 37083LT BUNGENDORE.GPJ <<DrawingFile>> 21/11/2024 09:42 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2019-05-31 Prj: JK 9.01.0 2018-03-20

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

JKGeotechnics

BOREHOLE LOG

Borehole No. 12

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 742.0 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION									CH	Silty CLAY: high plasticity, red brown and light brown, trace of fine to medium grained ironstone gravel, and root fibres.	w<PL	Hd		GRASS COVER RESIDUAL SCREEN: 11.92kg 0-0.2m, NO FCF
					N = 13 4,7,6								>600 >600 >600	
						741	1							
									-	Extremely Weathered sandstone: silty CLAY, low plasticity, grey and orange brown, trace of fine to medium grained ironstone gravel.	XW	Hd		ABERCROMBIE FORMATION
					N > 5 10,5/ 50mm REFUSAL								>600 >600	
						740	2			SANDSTONE: fine to medium grained, brown and grey, with extremely weathered and iron indurated bands.	DW	L - M	>600	LOW TO MODERATE 'TC' BIT RESISTANCE
						739	3			END OF BOREHOLE AT 3.00 m				
						738	4							
						737	5							
						736	6							

JKGeotechnics

BOREHOLE LOG

Borehole No. 13
1 / 1

SDUP2: 0-0.2m

Client: NSW DEPARTMENT OF EDUCATION
Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE
Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 737.4 m
Date: 14/10/24 **Datum:** AHD
Plant Type: JK308 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■					737			CI-CH	Silty CLAY: medium to high plasticity, orange brown, trace of fine to medium grained ironstone and quartz gravel.	w<PL	Hd		RESIDUAL SCREEN: 10.4kg 0-0.2m, NO FCF
				■	N = 19 6,8,11								>600 >600 >600	
	■						1		-	SANDSTONE: fine to medium grained, grey and brown, with iron indurated bands.	DW	L		ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
				■	N=SPT 3/ 0mm REFUSAL	736								
										as above, but light grey and light brown.		M		MODERATE RESISTANCE
						735	2							
							3							
						734								HIGH RESISTANCE
										END OF BOREHOLE AT 3.60 m				'TC' BIT REFUSAL
							4							
						733								
							5							
						732								
							6							
						731								

JK 9.02.4 LIB:GLB Log JK AUGERHOLE - MASTER 37083LT BUNGENDORE.GPJ <<DrawingFile>> 21/11/2024 09:40 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2019-05-31 Prj: JK 9.01.0 2018-03-20

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BOREHOLE LOG

Borehole No. 14
1 / 1

Client: NSW DEPARTMENT OF EDUCATION
Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE
Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.0 m
Date: 16/10/24 **Datum:** AHD
Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION														GRASS COVER
										Silty CLAY: high plasticity, red brown and light brown, trace of fine to medium grained quartz gravel, and root fibres.	w<PL	Hd		RESIDUAL
					N = 15 4,7,8								>600 >600 >600	SCREEN: 12.4kg 0-0.2m, NO FCF
						734	1							
									-	SANDSTONE: fine to medium grained, orange brown and brown, trace of fine to medium grained quartz gravel.	DW	L - M		ABERCROMBIE FORMATION LOW TO MODERATE 'TC' BIT RESISTANCE
						733	2			as above, but orange brown and light grey.		M		HIGH RESISTANCE
						732	3			END OF BOREHOLE AT 2.90 m				'TC' BIT REFUSAL
						731	4							
						730	5							
						729	6							

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BOREHOLE LOG

Borehole No. 15

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 738.8 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■			■	N = 16 8,8,8	738	1		CH	Silty CLAY: high plasticity, red brown and orange brown, trace of root fibres.	w<PL	Hd	>600 >600 >600	GRASS COVER RESIDUAL SCREEN: 10.9kg 0-0.2m, NO FCF
				■						as above, but red brown, orange brown and grey, without root fibres.				
				■	N=SPT 5/ 100mm REFUSAL	737	2		-	SANDSTONE: fine to medium grained, orange brown and brown, with extremely weathered bands, trace of fine to medium grained quartz gravel.	DW	L		ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
				■						SANDSTONE: fine to medium grained, light brown and grey, trace of fine to medium grained quartz gravel.		M - H		MODERATE TO HIGH RESISTANCE
										END OF BOREHOLE AT 2.40 m				HIGH RESISTANCE 'TC' BIT REFUSAL
						736	3							
						735	4							
						734	5							
						733	6							
						732								

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BOREHOLE LOG

Borehole No. 16

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 737.1 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						737				FILL: SIlty clay, medium plasticity, red brown and brown, trace of fine to medium grained ironstone gravel, ash and root fibres.	w~PL			GRASS COVER SCREEN: 10.7kg 0-0.2m, NO FCF
					N = 12 4,4,8								280 300 300	SCREEN: 3.0kg 0.2-0.8m, NO FCF
						736	1		CH	Silty CLAY: high plasticity, red brown and orange brown, trace of fine to medium grained quartz gravel.	w~PL	Hd	>600 >600 >600	APPEARS MODERATELY COMPACTED RESIDUAL
					N = 33 7,13,20					as above, but orange brown, grey and light grey.	w>PL		>600 >600 >600	
						735	2							
										as above, but orange brown, red brown, grey and light grey.	w<PL			
					N = 29 5,12,17	734	3						>600 >600 >600	
									-	MUDSTONE: fine to medium grained, brown and grey.	DW	H		ABERCROMBIE FORMATION
						733	4			END OF BOREHOLE AT 3.80 m				HIGH 'TC' BIT RESISTANCE 'TC' BIT REFUSAL
						732	5							
						731	6							

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BOREHOLE LOG

Borehole No. 17

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 744.2 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING						744			CH	Silty CLAY: high plasticity, ornage brown, trace of fine to medium grained ironstone and quartz gravel.	w<PL	Hd		RESIDUAL SCREEN: 11.47kg 0-0.2m, NO FCF
					N = 14 8,7,7								>600 540 560	
						743	1		-	SANDSTONE: fine to medium grained, brown and grey.	DW	L		ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
						742	2							
										REFER TO CORED BOREHOLE LOG				GROUNDWATER MONITORING WELL INSTALLED TO 7.75m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 3.0m TO 7.75m. CASING 0m TO 3.0m. 2mm SAND FILTER PACK 2.1m TO 7.75m. BENTONITE SEAL 0.2m TO 2.1m. BACKFILLED WITH SAND TO THE SURFACE. STICKING OUT OF GROUND FOR VISIBILITY.
						741	3							
						740	4							
						739	5							
						738	6							

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CORED BOREHOLE LOG

Borehole No. 17

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT | **Core Size:** NMLC | **R.L. Surface:** 744.2 m

Date: 15/10/24 | **Inclination:** VERTICAL | **Datum:** AHD

Plant Type: JK500 | **Bearing:** N/A | **Logged/Checked By:** C.A.R./A.B.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION: Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$	DEFECT DETAILS: SPACING (mm)	DEFECT DETAILS: DESCRIPTION (Specific / General)	Formation
		742			START CORING AT 2.50m						
90% RETURN		741	3		SANDSTONE: fine to medium grained, light brown and grey, foliated at 40-50°.	MW	L	0.20		(2.58m) J, 90°, Ir, R, Clay Ct (2.64m) XWS, 0°, 40 mm.t (2.74m) J, 80°, Ir, R, Fe Ct	Abercrombie Formation
							M	0.60		(3.06m) XWS, 40°, 8 mm.t	
		740	4		MUDSTONE: grey and light brown, foliated at 35-50°.		M - H	0.80 1.3		(3.60m) Be, 45°, P, R, Clay Ct (3.62m) XWS, 0°, 30 mm.t (3.73m) Be, 40°, St, R, Clay Ct (3.89m) J, 90°, Ir, R, Clay FILLED, 2 mm.t (4.00m) J, 30°, P, R, Clay FILLED, 1 mm.t (4.39m) J, 30°, P, R, Clay FILLED, 2 mm.t (4.46m) J, 30°, P, R, Clay FILLED, 2 mm.t (4.50m) J, 30°, P, R, Clay FILLED, 8 mm.t (4.60m) J, 70°, St, R, Qz FILLED, 4 mm.t (4.64m) XWS, 30°, 6 mm.t (4.65-4.87m) Closely spaced Ji, J and XWS, <10mm spacing	
		739	5		Interbedded MUDSTONE: grey and light brown, and SANDSTONE: fine grained, light brown and grey, foliated at 40-50°.			0.60 1.2		(5.16m) Be, 35°, P, R, Fe Ct (5.25m) Be, 35°, P, R, Fe Ct (5.51m) Be, 35°, P, R, Clay FILLED, 2 mm.t (5.60m) J, 0°, Ir, R, Clay Ct (5.89m) J x 2, 60°, P, R, Fe Ct	
		738	6					0.80		(6.15m) Be, 40°, P, R, Fe Ct (6.18m) Ji, 70°, P (6.52m) XWS, 30°, 20 mm.t (6.84m) J, 80°, Ir, R, Fe Ct	
		737	7		SANDSTONE: fine grained, grey brown, foliated at 40-50°.		H	1.5 1.5 1.2		(7.03m) Be, 30°, P, R, Fe Ct (7.17m) Ji, 80°, Un (7.32m) Be, 40°, P, R, Fe Ct (7.42m) Be, 40°, P, R, Fe Ct (7.54m) Be, 40°, P, R, Fe Ct (7.67m) J, 70°, P, R, Fe Ct	
		736	8		END OF BOREHOLE AT 7.75 m						

JK 9.02.4 LIB:GLB Log JK CORED BOREHOLE - MASTER 37083LT BUNGENDORE.GPJ <<DrawingFile>> 21/11/2024 09:42 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2019-05-31 Prj: JK 9.01.0 2018-03-20

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

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BOREHOLE LOG

Borehole No. 18

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 743.7 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■			■	N = 13 4,7,6	743	1		CH	Silty CLAY: high plasticity, red brown and light brown.	w<PL		>600 >600 >600	GRASS COVER RESIDUAL SCREEN: 10.34kg 0-0.2m, NO FCF
				■		742	2		-	SANDSTONE: fine to medium grained, brown and grey, with extremely weathered bands and iron indurated bands.	DW	L - M		ABERCROMBIE FORMATION BANDED LOW TO MODERATE 'TC' BIT RESISTANCE
				■		741	3			as above, but grey and orange brown.		M - H		MODERATE TO HIGH RESISTANCE HIGH RESISTANCE
						740	4			END OF BOREHOLE AT 3.60 m				'TC' BIT REFUSAL
						739	5							
						738	6							
						737								

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BOREHOLE LOG

Borehole No. 19

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 740.6 m

Date: 15/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING						740	0		CH	Silty CLAY: high plasticity, orange brown and red brown, trace of fine to medium grained ironstone and quartz gravel.	w<PL	Hd		RESIDUAL SCREEN: 10.03kg 0-0.2m, NO FCF
					N = 12 5,6,6		1						>600 >600 >600	
						739						VSt	280 300 330	
					N = 33 4,15,18		2		-	Extremely Weathered sandstone: silty CLAY, medium plasticity, brown and grey.	XW	(Hd)		ABERCROMBIE FORMATION
						738				SANDSTONE: fine to medium grained, light brown and grey.	DW	L		LOW 'TC' BIT RESISTANCE
										REFER TO CORED BOREHOLE LOG				
						737	3							
							4							
						736								
							5							
						735								
							6							
						734								

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CORED BOREHOLE LOG

Borehole No. 19 **2 / 2**

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Core Size:** NMLC **R.L. Surface:** 740.6 m

Date: 15/10/24 **Inclination:** VERTICAL **Datum:** AHD

Plant Type: JK500 **Bearing:** N/A **Logged/Checked By:** C.A.R./A.B.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION: Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$	DEFECT DETAILS: SPACING (mm)	DEFECT DETAILS: DESCRIPTION (Specific / General)	Formation
					START CORING AT 2.60m						
90% RETURN		738	3		SANDSTONE: fine to medium grained, light brown and grey, foliated at 40-70°.	MW	M			(2.97m) J x 2, 60°, P, R, Cn (3.11m) Jh, 70°, P, Clay FILLED, 2 mm.t (3.21m) CS, 0°, 80 mm.t	Abercrombie Formation
		737	4		MUDSTONE: grey and light brown, foliated at 40-70°, with occasional fine grained sandstone bands and quartz veins.			0.40 0.50 0.40 0.10 0.40		(3.42m) Be, 5°, P, R, Fe Sn (3.46m) Be, 50°, P, R, Fe Ct (3.59m) Be, 40°, P, R, Fe Ct (3.81m) Be, 5°, P, R, Fe Ct (3.87m) Be, 40°, Ir, R, Clay Ct (3.96m) XWS, 0°, Qz FILLED, 200 mm.t (4.32m) Cr, 0°, Qz FILLED, 50 mm.t (4.45m) Jh, 60°, P, R, Clay FILLED, 1 mm.t (4.65m) J, 60°, P, S, Clay Ct (4.82m) J, 50°, P, R, Clay FILLED, 4 mm.t	
		736	5		NO CORE 0.32m						
		735	6		Extremely Weathered sandstone: silty CLAY, low plasticity, light brown, with quartz veins and very low strength sandstone bands.	XW	(Hd)				
					NO CORE 0.10m						
		734	7		SANDSTONE: fine to medium grained, light brown and grey, with occasional mudstone bands, foliated at 30-50°.	MW	L - M	0.30 0.30		(6.06m) Jh x 2, 70°, C, Clay FILLED, 1 mm.t (6.27m) J, 60°, P, S, Clay FILLED, 2 mm.t (6.44m) J, 70°, P, Clay FILLED, 2 mm.t (6.57m) J, 20°, Ir, R, Fe Sn (6.68m) XWS, 30°, 100 mm.t	Abercrombie Formation
							M	1.0 0.60		(6.89m) J, 90°, Ir, R, Fe Ct (7.36m) XWS, 20°, 30 mm.t	
		733	8		END OF BOREHOLE AT 7.52 m						
		732									

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

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BOREHOLE LOG

Borehole No. 20

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 743.2 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■			■		743			CH	Silty CLAY: high plasticity, orange brown, trace of fine to coarse grained quartz gravel, and root fibres.	w<PL	Hd		RESIDUAL SCREEN: 10.6kg 0-0.2m, NO FCF
				■	N = 18 5,9,9								>600 >600	
	■								-	Extremely Weathered sandstone: silty CLAY, medium plasticity, brown and light brown.	XW	Hd	>600 >600 >600 >600	ABERCROMBIE FORMATION
				■		742	1							
				■	N=SPT 10/ 100mm REFUSAL					SANDSTONE: fine grained, brown and light brown.	DW	L - M		LOW 'TC' BIT RESISTANCE
				■		741	2							
												M		MODERATE RESISTANCE
							3			END OF BOREHOLE AT 3.00 m				
						740								
							4							
						739								
							5							
						738								
							6							
						737								

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BOREHOLE LOG

Borehole No. 21

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 741.5 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						741	0		CH	Silty CLAY: high plasticity, orange brown, trace of fine to medium grained ironstone gravel, and root fibres.	w<PL	Hd		RESIDUAL SCREEN: 12.4kg 0-0.2m, NO FCF
					N = 18 7,10,8								>600 >600	
							1		-	Extremely Weathered sandstone: silty CLAY, medium plasticity, light brown, brown and grey, with very low strength sandstone bands.	XW	Hd	>600	ABERCROMBIE FORMATION
					N > 25 5,9,16/ 100mm REFUSAL	740							>600 >600 >600	
							2			SANDSTONE: fine grained, brown and light brown.	DW	L - M		LOW 'TC' BIT RESISTANCE
						739						M		MODERATE RESISTANCE
							3			END OF BOREHOLE AT 3.00 m				
						738	4							
						737	5							
						736	6							
						735								

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BOREHOLE LOG

Borehole No. 22

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 739.7 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■													GRASS COVER
														RESIDUAL
				■	N = 18 3,6,12	739							440 470 430	SCREEN: 14.6kg 0-0.2m, NO FCF
	■						1		CH	Silty CLAY: high plasticity, light brown and orange brown, trace of fine to medium grained ironstone and quartz gravel, and root fibres.	w<PL	Hd		
				■					-	MUDSTONE: fine grained, brown and grey brown.	HW	M - H		ABERCROMBIE FORMATION
						738								MODERATE TO HIGH 'TC' BIT RESISTANCE
										END OF BOREHOLE AT 1.70 m				HIGH RESISTANCE
							2							'TC' BIT REFUSAL
						737	3							
						736	4							
						735	5							
						734	6							
						733								

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BOREHOLE LOG

Borehole No. 23

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 742.0 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION									CH	Silty CLAY: high plasticity, orange brown, trace of root fibres.	w<PL	Hd		RESIDUAL SCREEN: 10.28kg 0-0.2m, NO FCF
					N = 18 9,8,10								>600 >600 >600	
						741	1		-	Extremely Weathered sandstone: silty CLAY, low plasticity, light brown and brown.	XW	Hd		ABERCROMBIE FORMATION VERY LOW 'TC' BIT RESISTANCE
					N > 6 10,6/ 50mm REFUSAL								>600 >600 >600	
						740	2			SANDSTONE: fine grained, light brown and brown.	DW	L - M		LOW TO MODERATE RESISTANCE
						739	3			END OF BOREHOLE AT 3.00 m				
						738	4							
						737	5							
						736	6							

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BOREHOLE LOG

Borehole No. 24

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 741.8 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION									CH	Silty CLAY: high plasticity, red brown and orange brown, trace of root fibres.	w<PL	VSt		GRASS COVER RESIDUAL
					N = 10 4,5,5	741	1						320 260 310	SCREEN: 12.4kg 0-0.2m, NO FCF
									-	SANDSTONE: fine grained, brown and orange brown.	MW	M		ABERCROMBIE FORMATION
						740						H		MODERATE 'TC' BIT RESISTANCE
							2			END OF BOREHOLE AT 1.80 m				HIGH RESISTANCE 'TC' BIT REFUSAL
						739	3							
						738	4							
						737	5							
						736	6							
						735								

JK 9.02.4 LIB:GLB Log JK AUGERHOLE - MASTER 37083LT BUNGENDORE.GPJ <<DrawingFile>> 21/11/2024 09:40 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2018-05-31 Prj: JK 9.01.0 2018-03-20

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BOREHOLE LOG

Borehole No. 25
1 / 1

Client: NSW DEPARTMENT OF EDUCATION
Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE
Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 740.1 m
Date: 17/10/24 **Datum:** AHD
Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						740			CI	Silty CLAY: medium plasticity, red brown, orange brown and grey, trace of fine to medium grained quartz gravel, and fine to medium grained sand.	w<PL	Hd		GRASS COVER RESIDUAL SCREEN: 13.0kg 0-0.2m, NO FCF TOO FRIABLE FOR HP TESTING
					N = 17 5,8,9	739	1							
									-	MUDSTONE: fine grained, brown and grey brown.	DW	M		ABERCROMBIE FORMATION MODERATE 'TC' BIT RESISTANCE
						738	2			as above, but with red brown.				
						737	3					M - H		HIGH RESISTANCE
						736	4			END OF BOREHOLE AT 3.90 m				'TC' BIT REFUSAL
						735	5							
						734	6							

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BOREHOLE LOG

Borehole No. 26

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 739.0 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING									CH	Silty CLAY: high plasticity, orange brown, trace of fine to medium grained quartz gravel, and ash.	w<PL	Hd		RESIDUAL SCREEN: 10.2kg 0-0.2m, NO FCF
					N = 19 6,8,11								>600 >600 >600	
						738	1			Silty CLAY: high plasticity, light brown and grey.				
					N = 16 4,6,10								420 500 470	
						737	2		-	MUDSTONE: fine grained, light brown and grey.	DW	M		ABERCROMBIE FORMATION MODERATE 'TC' BIT RESISTANCE
										REFER TO CORED BOREHOLE LOG				
						736	3							
						735	4							
						734	5							
						733	6							

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CORED BOREHOLE LOG

Borehole No. 26

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT | **Core Size:** NMLC | **R.L. Surface:** 739.0 m

Date: 16/10/24 | **Inclination:** VERTICAL | **Datum:** AHD

Plant Type: JK500 | **Bearing:** N/A | **Logged/Checked By:** C.A.R./A.B.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION: Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$	DEFECT DETAILS: SPACING (mm)	DEFECT DETAILS: DESCRIPTION (Specific / General)	Formation
					START CORING AT 2.52m						
90% RETURN		736	3		SANDSTONE: fine to medium grained, brown, foliated at 40-50°.	HW	L - M	0.30		(2.59m) Ji, 80°, P	Abercrombie Formation
					MUDSTONE: brown and grey, with occasional fine grained sandstone bands, foliated at 40-50°.			0.30		(2.69m) CS, 40°, 15 mm.t	
										(2.87m) XWS, 40°, 40 mm.t	
								0.40		(2.97m) Be, 40°, P, R, Clay Ct	
										(3.05m) J, 60°, P, S, Cn	
										(3.35m) XWS, 30°, 50 mm.t	
										(3.52m) J, 60°, C, R, Cn	
										(3.63m) J, 50°, St, R, Fe Sn	
										(3.71m) J, 70°, Ir, R, Cn	
		735	4					0.20		(3.93-4.64m) J/Ji, 90°, P, S, Clay Ct	
										(4.68m) J, 10°, C, R, Clay FILLED, 2 mm.t	
								0.40		(4.81m) CS, 30°, 20 mm.t	
		734	5							(5.02m) CS, 30°, 18 mm.t	
										(5.11m) CS, 30°, 55 mm.t	
										(5.22m) CS, 30°, 170 mm.t	
								0.30		(5.45m) Be, 40°, P, R, Fe Ct	
										(5.48m) Be, 40°, P, S, Fe Ct	
										(5.60m) J, 80°, C, R, Clay Ct	
						MW	M			(5.79m) J, 30°, P, R, Fe Ct	
								0.40		(5.91m) J, 20°, C, R, Fe Ct	
		733	6							(6.19m) Be, 40°, P, S, Fe Sn	
								0.50		(6.36m) Be x 2, 40°, P, S, Fe Ct	
										(6.40m) Be, 40°, P, R, Fe Ct	
										(6.46m) Be, 40°, P, R, Fe Ct	
								0.40		(6.72m) Be, 50°, P, R, Fe Ct	
										(6.80m) J, 35°, P, R, Fe Ct	
		732	7							(6.97m) J, 90°, P, R, Fe Ct	
								0.30		(7.15m) CS, 20°, 10 mm.t	
					SANDSTONE: fine to medium grained, light grey brown and orange brown, with occasional quartz veins, foliated at 40-50°.					(7.22m) J, 0°, Ir, R, Fe Ct	
										(7.28m) Be, 25°, P, R, Fe Ct	
										(7.31m) Jh, 60°, P	
										(7.40m) Jh, 55°, P	
										(7.44m) Jh, 65°, P, Cn	
										(7.53m) J, 60°, P, R, Fe Ct	
								0.40		(7.68m) Be, 50°, P, R, Fe Ct	
										(7.72m) Be, 50°, P, R, Clay Ct	
										(7.74m) XWS, 20°, 20 mm.t	
		731	8		END OF BOREHOLE AT 7.83 m					(7.78m) J, 90°, P, R, Fe Ct	

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

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BOREHOLE LOG

Borehole No. 27

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 739.7 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION									CH	Silty CLAY: high plasticity, orange brown, trace of fine to medium grained ironstone gravel, roots and root fibres.	w<PL w>PL	VSt		RESIDUAL SCREEN: 10.3kg 0-0.2m, NO FCF
					N = 6 3,3,3	739	1						200 220 250	
												St		
					N = 10 3,4,6	738							180 200 190	
							2		-	Extremely Weathered sandstone: silty CLAY, low plasticity, light grey and light brown, with iron indurated bands.	XW DW	VSt M	300 280 220	ABERCROMBIE FORMATION MODERATE 'TC' BIT RESISTANCE
						737				SANDSTONE: fine grained, light grey and brown.				HIGH RESISTANCE
							3			END OF BOREHOLE AT 3.20 m				'TC' BIT REFUSAL
						736	4							
						735	5							
						734	6							
						733								

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BOREHOLE LOG

Borehole No. 28

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 740.7 m

Date: 16/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION OF AUGERING									CI	Silty CLAY: medium plasticity, orange bronw, trace of fine to medium grained ironstone gravel.	w<PL	Hd		RESIDUAL SCREEN: 10.5kg 0-0.2m, NO FCF
					N = 13 4,5,8	740							>600 >600 >600	
							1		-	Extremely Weathered sandstone: silty CLAY, medium plasticity, light brown and grey.	XW	(Hd)		ABERCROMBIE FORMATION VERY LOW 'TC' BIT RESISTANCE TOO FRIABLE FOR HP TESTING
					N = 27 8,12,15	739								
							2			SANDSTONE: fine to medium grained, brown and grey.	DW	L - M		LOW TO MODERATE RESISTANCE
						738				REFER TO CORED BOREHOLE LOG				GROUNDWATER MONITORING WELL INSTALLED TO 2.42m. CLASS 18 MACHINE SLOTTED 50mm DIA. PVC STANDPIPE 3.0m TO 7.42m. CASIN 0m TO 3.0m. 2mm SAND FILTER PACK 2.0m TO 7.42m. BENTONITE SEAL 0m TO 2.0m.
							3							
						737								
							4							
						736								
							5							
						735								
							6							
						734								

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CORED BOREHOLE LOG

Borehole No. 28

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT | **Core Size:** NMLC | **R.L. Surface:** 740.7 m

Date: 16/10/24 | **Inclination:** VERTICAL | **Datum:** AHD

Plant Type: JK500 | **Bearing:** N/A | **Logged/Checked By:** C.A.R./A.B.

Water Loss\Level	Barrel Lift	RL (m AHD)	Depth (m)	Graphic Log	CORE DESCRIPTION: Rock Type, grain characteristics, colour, texture and fabric, features, inclusions and minor components	Weathering	Strength	POINT LOAD STRENGTH INDEX $I_s(50)$ (VL -0.1, L -0.3, M -1, H -3, VH -10, EH)	DEFECT DETAILS: SPACING (mm) (600, 200, 60, 20)	DEFECT DETAILS: DESCRIPTION (Specific / General)	Formation
					START CORING AT 2.48m						
90% RETURN		738	3		Interbedded SANDSTONE: fine to medium grained, brown, and MUDSTONE: grey brown, foliated at 50-60°.	HW	M	0.30		(2.58m) Be, 40°, P, R, Clay Ct (2.67m) XWS, 0°, 25 mm.t	Abercrombie Formation
					Extremely Weathered sandstone: silty CLAY, low plasticity, light brown, with fine to medium grained sand.	XW	(Hd)				
					MUDSTONE: grey brown and light brown, with occasional sandstone laminae, foliated at 35-50°.	HW	M			(3.19-3.62m) J, 90°, Ir, R, Clay FILLED, 10 mm.t	
		737	4					0.60		(3.69m) Ji, 90°, Ir (3.78m) J, 80°, St, R, Clay Ct	
								0.60		(4.20m) J, 10°, Ir, R, Clay Ct (4.28m) J, 20°, P, R, Clay Ct (4.38m) Be, 35°, C, Clay Ct (4.44m) J x 2, 20°, C, R, Clay Ct (4.50m) XWS, 0°, 70 mm.t	
		736	5		as above, but with conglomerate bands and quartz gravel.			0.70 1.0 0.90		(4.83m) J, 20°, Ir, R, Qz FILLED (4.92m) J, 10°, St, R, Fe Ct (5.06m) Ji, 70°, P (5.18m) J, 90°, St, R, Fe Ct	
		735	6		MUDSTONE: brown and grey, with fine grained sandstone bands, foliated at 30-50°.			0.70 0.60 0.40		(5.34m) J, 80°, St, R, Clay Ct (5.37m) CS, 20°, 10 mm.t (5.53m) J, 90°, Ir, R, Qz FILLED (5.76m) J, 60°, St, R, Qz FILLED (5.93m) J, 20°, C, S, Fe Ct (6.07m) J, 10°, P, R, Clay Ct (6.16m) Be, 40°, P, R, Clay Ct (6.21m) Be, 40°, P, R, Clay Ct (6.30m) Be, 30°, P, R, Clay Ct (6.40m) J, 60°, C, R, Fe Ct	
		734	7					0.60 0.30 0.50		(6.55m) Be, 50°, P, R, Clay Ct (6.60m) Be, 50°, P, R, Clay Ct (6.72m) Be, 50°, P, R, Clay Ct (6.79m) Be, 40°, P, R, Clay Ct (6.86m) Be, 35°, C, R, Fe Ct (6.90m) XWS, 15°, 25 mm.t (7.03m) Be, 30°, P, R, Clay Ct (7.10m) Be, 30°, P, R, Clay Ct	
								0.60		(7.26m) J, 70°, P, R, Fe Ct	
		733	8		END OF BOREHOLE AT 7.42 m						
		732									

FRACTURES NOT MARKED ARE CONSIDERED TO BE DRILLING AND HANDLING BREAKS

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BOREHOLE LOG

Borehole No. 29

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 737.8 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■								CH	Silty CLAY: high plasticity, orange brown and light brown, trace of root fibres.	w<PL	Hd		GRASS COVER RESIDUAL SCREEN: 12.8kg 0-0.2m, NO FCF
				■	N = 17 6,8,9	737	1						540 570 570	
				■						as above, but orange brown and grey, without root fibres.	w~PL	VSt		
				■	N > 23 7,11,12/ 50mm REFUSAL	736	2		-	Extremely Weathered sandstone: silty CLAY, low plasticity, orange brown and grey.	XW	Hd	330 310 340 >600 >600 >600	ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
				■		735	3			SANDSTONE: fine grained, brown and grey, with extremely weathered and iron indurated bands.	DW	L		
				■								M		MODERATE TO HIGH RESISTANCE
				■						as above, but without extremely weathered and iron indurated bands.		H		HIGH RESISTANCE
						734	4			END OF BOREHOLE AT 3.70 m				'TC' BIT REFUSAL
						733	5							
						732	6							
						731								

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BOREHOLE LOG

Borehole No. 30

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 738.8 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■								CH	Silty CLAY: high plasticity, red brown and orange brown, trace of fine to medium grained ironstone gravel.	w<PL	Hd		GRASS COVER RESIDUAL SCREEN: 15.3kg 0-0.2m, NO FCF
	■	■			N = 14 5,7,7	738	1						>600 >600 >600	
				■					-	SANDSTONE: fine grained, orange brown and light grey.	DW	H		ABERCROMBIE FORMATION HIGH 'TC' BIT RESISTANCE
						737	2			END OF BOREHOLE AT 1.70 m				'TC' BIT REFUSAL
						736	3							
						735	4							
						734	5							
						733	6							
						732								

JK 9.02.4 LIB:GLB Log JK AUGERHOLE - MASTER 37083LT BUNGENDORE.GPJ <<DrawingFile>> 21/11/2024 09:40 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2018-05-31 Prj: JK 9.01.0 2018-03-20

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BOREHOLE LOG

Borehole No. 31

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 736.7 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION									CH	Silty CLAY: high plasticity, orange brown, trace of fine to medium grained ironstone and quartz gravel, and root fibres.	w<PL	Hd		RESIDUAL SCREEN: 11.3kg 0-0.2m, NO FCF
					N = 16 6,7,9	736	1						>600 >600 530	
										as above, but without gravel and root fibres.				
					N = 9 4,5,4	735	2						450 420 470	
											w~PL			
						734	3		-	SANDSTONE: fine to medium grained, brown and light brown.	DW	L - M		ABERCROMBIE FORMATION LOW TO MODERATE 'TC' BIT RESISTANCE
										END OF BOREHOLE AT 3.00 m				
						733	4							
						732	5							
						731	6							
						730								

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BOREHOLE LOG

Borehole No. 32

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 737.4 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						737	0		CL	Silty CLAY: low plasticity, orange brown, trace of fine to medium grained ironstone and quartz gravel.	w<PL	Hd		RESIDUAL SCREEN: 10.5kg 0-0.2m, NO FCF
					N = 11 5,5,6		1						>600 520 530	
						736						VSt		
					N = 10 4,4,6								300 310 270	
						735	2		-	Extremely Weathered mudstone: silty CLAY: low plasticity, light grey and light brown, with iron indurated bands.	XW	(Hd)		ABERCROMBIE FORMATION
										MUDSTONE: fine grained, brown and light brown, with iron indurated bands.	DW	M		LOW TO MODERATE 'TC' BIT RESISTANCE
						734	3			END OF BOREHOLE AT 3.00 m				
						733	4							
						732	5							
						731	6							

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BOREHOLE LOG

Borehole No. 33

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 738.4 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK500 **Logged/Checked By:** C.A.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						738			CI	Silty CLAY: medium plasticity, orange brown, trace of fine to medium grained ironstone and quartz gravel, and root fibres.	w<PL	Hd		RESIDUAL SCREEN: 11.9kg 0-0.2m, NO FCF
					N = 18 7,9,9		1						>600 >600 >600	
					N=SPT 6/ 20mm REFUSAL	737			-	MUDSTONE: fine grained, brown and light brown, with quartz bands.	DW	M		ABERCROMBIE FORMATION MODERATE 'TC' BIT RESISTANCE
						736	2							HIGH RESISTANCE
										END OF BOREHOLE AT 2.50 m				'TC' BIT REFUSAL
						735	3							
						734	4							
						733	5							
						732	6							

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BOREHOLE LOG

Borehole No. 34

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.2 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION						735				FILL: Silty clay, low plasticity, brown, trace of ash and root fibres.	w<PL			GRASS COVER
									CH	Silty CLAY: high plasticity, red brown and brown, trace of fine to medium grained quartz and ironstone gravel.	w<PL	Hd		SCREEN: 13.3kg 0-0.2m, NO FCF
					N = 15 5,7,8								540 600 590	RESIDUAL
						734	1		CI	Silty CLAY: medium plasticity, orange brown and grey.	w~PL	VSt	240 310 320	
					N = 25 7,9,16									
						733	2		-	Extremely Weathered mudstone: silty CLAY, low plasticity, orange brown and grey, trace of fine to medium grained quartz gravel.	XW	Hd		ABERCROMBIE FORMATION
										MUDSTONE: fine to medium grained, grey brown and brown, with extremely weathered and iron indurated bands.	DW	L		LOW 'TC' BIT RESISTANCE
						732	3			END OF BOREHOLE AT 3.00 m				
						731	4							
						730	5							
						729	6							

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BOREHOLE LOG

Borehole No. 35

1 / 1

Client: NSW DEPARTMENT OF EDUCATION

Project: PROPOSED NEW HIGH SCHOOL IN BUNGENDORE

Location: BIRCHFIELD DRIVE, BUNGENDORE, NSW

Job No.: 37083LT **Method:** SPIRAL AUGER **R.L. Surface:** 735.3 m

Date: 17/10/24 **Datum:** AHD

Plant Type: JK308 **Logged/Checked By:** K.R./A.B.

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	RL (m AHD)	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel Density	Hand Penetrometer Readings (kPa)	Remarks
DRY ON COMPLETION	■			■	N = 12 5,6,6	735	1		CI	Silty CLAY: medium plasticity, light brown and red brown, trace of fine to medium grained quartz gravel, and root fibres.	w<PL	Hd	>600 >600 >600	GRASS COVER RESIDUAL SCREEN: 12.8kg 0-0.2m, NO FCF
	■			■	N > 21 6,16,5/ 0mm REFUSAL	734	2		-	Extremely Weathered mudstone: silty CLAY, low plasticity, grey and orange brown, trace of fine to medium grained sandstone gravel.	XW	Hd	>600 >600 >600	ABERCROMBIE FORMATION LOW 'TC' BIT RESISTANCE
				■		733				MUDSTONE: fine grained, brown and grey, with extremely weathered and iron indurated bands.	DW	M		MODERATE TO HIGH RESISTANCE
						732	3			END OF BOREHOLE AT 3.00 m				
						731	4							
						730	5							
						729	6							

JK 9.02.4 LIB:GLB Log JK AUGERHOLE - MASTER 37083LT BUNGENDORE.GPJ <<DrawingFile>> 21/11/2024 09:41 10.01.00.01 Datgel Lab and In Situ Tool - DGD | Lib: JK 9.02.4 2019-05-31 Prj: JK 9.01.0 2018-03-20

ENVIRONMENTAL LOGS EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the environmental report in regard to classification methods, field procedures and certain matters relating to the logging of soil and rock. Not all notes are necessarily relevant to all reports.

Where geotechnical borehole logs are utilised for environmental purpose, reference should also be made to the explanatory notes included in the geotechnical report. Environmental logs are not suitable for geotechnical purposes.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Environmental studies include gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726:2017 *'Geotechnical Site Investigations'*. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geoenvironmental practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached soil classification table qualified by the grading of other particles present (eg. sandy clay) as set out below:

Soil Classification	Particle Size
Clay	< 0.002mm
Silt	0.002 to 0.075mm
Sand	0.075 to 2.36mm
Gravel	2.36 to 63mm
Cobbles	63 to 200mm
Boulders	> 200mm

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

Relative Density	SPT 'N' Value (blows/300mm)
Very loose (VL)	< 4
Loose (L)	4 to 10
Medium dense (MD)	10 to 30
Dense (D)	30 to 50
Very Dense (VD)	> 50

Cohesive soils are classified on the basis of strength (consistency) either by use of a hand penetrometer, vane shear, laboratory testing and/or tactile engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength (kPa)	Indicative Undrained Shear Strength (kPa)
Very Soft (VS)	≤ 25	≤ 12
Soft (S)	> 25 and ≤ 50	> 12 and ≤ 25
Firm (F)	> 50 and ≤ 100	> 25 and ≤ 50
Stiff (St)	> 100 and ≤ 200	> 50 and ≤ 100
Very Stiff (VSt)	> 200 and ≤ 400	> 100 and ≤ 200
Hard (Hd)	> 400	> 200
Friable (Fr)	Strength not attainable – soil crumbles	

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'shale' is used to describe fissile mudstone, with a weakness parallel to bedding. Rocks with alternating inter-laminations of different grain size (eg. siltstone/claystone and siltstone/fine grained sandstone) are referred to as 'laminite'.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All methods except test pits, hand auger drilling and portable Dynamic Cone Penetrometers require the use of a mechanical rig which is commonly mounted on a truck chassis or track base.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils and 'weaker' bedrock if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for a large excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the

structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Refusal of the hand auger can occur on a variety of materials such as obstructions within any fill, tree roots, hard clay, gravel or ironstone, cobbles and boulders, and does not necessarily indicate rock level.

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

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

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

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

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, NMLC or HQ triple tube core barrels, which give a core of about 50mm and 61mm diameter, respectively, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as NO CORE. The location of NO CORE recovery is determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the bottom of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils, as a means of indicating density or strength and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289.6.3.1–2004 (R2016) *'Methods of Testing Soils for Engineering Purposes, Soil Strength and Consolidation Tests – Determination of the Penetration Resistance of a Soil – Standard Penetration Test (SPT)'*.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63.5kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form:

- In the case where full penetration is obtained with successive blow counts for each 150mm of, say, 4, 6 and 7 blows, as

  N = 13
  4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

  N > 30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

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

LOGS

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

The terms and symbols used in preparation of the logs are defined in the following pages.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than 'straight line' variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

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

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

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

FILL

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

The presence of fill materials is usually regarded with caution as the possible variation in density and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse environmental characteristics or behaviour. If the volume and nature of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing has not been undertaken to confirm the soil classification and rock strengths indicated on the environmental logs unless noted in the report.

SYMBOL LEGENDS

SOIL


FILL


TOPSOIL


CLAY (CL, CI, CH)


SILT (ML, MH)


SAND (SP, SW)


GRAVEL (GP, GW)


SANDY CLAY (CL, CI, CH)


SILTY CLAY (CL, CI, CH)


CLAYEY SAND (SC)


SILTY SAND (SM)


GRAVELLY CLAY (CL, CI, CH)


CLAYEY GRAVEL (GC)


SANDY SILT (ML, MH)


PEAT AND HIGHLY ORGANIC SOILS (Pt)

ROCK


CONGLOMERATE


SANDSTONE


SHALE/MUDSTONE


SILTSTONE


CLAYSTONE


COAL


LAMINITE


LIMESTONE


PHYLLITE, SCHIST


TUFF


GRANITE, GABBRO


DOLERITE, DIORITE


BASALT, ANDESITE


QUARTZITE

OTHER MATERIALS


BRICKS OR PAVERS


CONCRETE


ASPHALTIC CONCRETE

CLASSIFICATION OF COARSE AND FINE GRAINED SOILS

Major Divisions		Group Symbol	Typical Names	Field Classification of Sand and Gravel	Laboratory Classification	
Coarse grained soil (more than 65% of soil excluding oversize fraction is greater than 0.075mm)	GRAVEL (more than half of coarse fraction is larger than 2.36mm	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 4$ $1 < C_c < 3$
		GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	Fines behave as silt
		GC	Gravel-clay mixtures and gravel-sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	Fines behave as clay
	SAND (more than half of coarse fraction is smaller than 2.36mm)	SW	Sand and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	$C_u > 6$ $1 < C_c < 3$
		SP	Sand and gravel-sand mixtures, little or no fines	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤ 5% fines	Fails to comply with above
		SM	Sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥ 12% fines, fines are silty	N/A
		SC	Sand-clay mixtures	'Dirty' materials with excess of plastic fines, medium to high dry strength	≥ 12% fines, fines are clayey	

Major Divisions		Group Symbol	Typical Names	Field Classification of Silt and Clay			Laboratory Classification
				Dry Strength	Dilatancy	Toughness	% < 0.075mm
ine grained soils (more than 35% of soil excluding oversize fraction is less than 0.075mm)	SILT and CLAY (low to medium plasticity)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
		CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
		OL	Organic silt	Low to medium	Slow	Low	Below A line
	SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
		CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
		OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
	Highly organic soil	Pt	Peat, highly organic soil	–	–	–	–

Laboratory Classification Criteria

A well graded coarse grained soil is one for which the coefficient of uniformity $Cu > 4$ and the coefficient of curvature $1 < C_c < 3$. Otherwise, the soil is poorly graded. These coefficients are given by:

$$C_U = \frac{D_{60}}{D_{10}} \qquad and \qquad C_C = \frac{(D_{30})^2}{D_{10}\, D_{60}}$$

Where D_{10}, D_{30} and D_{60} are those grain sizes for which 10%, 30% and 60% of the soil grains, respectively, are smaller.

NOTES:

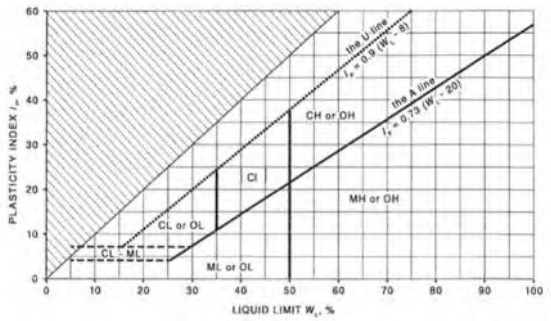
1 For a coarse grained soil with a fines content between 5% and 12%, the soil is given a dual classification comprising the two group symbols separated by a dash; for example, for a poorly graded gravel with between 5% and 12% silt fines, the classification is GP-GM.

2 Where the grading is determined from laboratory tests, it is defined by coefficients of curvature (C_c) and uniformity (C_u) derived from the particle size distribution curve.

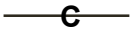
3 Clay soils with liquid limits > 35% and ≤ 50% may be classified as being of medium plasticity.

4 The U line on the Modified Casagrande Chart is an approximate upper bound for most natural soils.

Modified Casagrande Chart for Classifying Silts and Clays according to their Behaviour



LOG SYMBOLS

Log Column	Symbol	Definition
Groundwater Record		Standing water level. Time delay following completion of drilling/excavation may be shown.
		Extent of borehole/test pit collapse shortly after drilling/excavation.
		Groundwater seepage into borehole or test pit noted during drilling or excavation.
Samples	ES	Sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos analysis.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
	PFAS	Soil sample taken over depth indicated, for analysis of Per- and Polyfluoroalkyl Substances.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'Refusal' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60° solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25 PID = 100	Vane shear reading in kPa of undrained shear strength. Photoionisation detector reading in ppm (soil sample headspace test).
Moisture Condition (Fine Grained Soils)	w > PL $w \approx$ PL w < PL $w \approx$ LL w > LL	Moisture content estimated to be greater than plastic limit. Moisture content estimated to be approximately equal to plastic limit. Moisture content estimated to be less than plastic limit. Moisture content estimated to be near liquid limit. Moisture content estimated to be wet of liquid limit.
(Coarse Grained Soils)	D M W	DRY – runs freely through fingers. MOIST – does not run freely but no free water visible on soil surface. WET – free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS S F St VSt Hd Fr ( )	VERY SOFT – unconfined compressive strength ≤ 25kPa. SOFT – unconfined compressive strength > 25kPa and ≤ 50kPa. FIRM – unconfined compressive strength > 50kPa and ≤ 100kPa. STIFF – unconfined compressive strength > 100kPa and ≤ 200kPa. VERY STIFF – unconfined compressive strength > 200kPa and ≤ 400kPa. HARD – unconfined compressive strength > 400kPa. FRIABLE – strength not attainable, soil crumbles. Bracketed symbol indicates estimated consistency based on tactile examination or other assessment.
Density Index/ Relative Density (Cohesionless Soils)	VL L MD D VD ( )	**Density Index (I_D) Range (%)** / **SPT 'N' Value Range (Blows/300mm)** VERY LOOSE ≤ 15 / 0 – 4 LOOSE > 15 and ≤ 35 / 4 – 10 MEDIUM DENSE > 35 and ≤ 65 / 10 – 30 DENSE > 65 and ≤ 85 / 30 – 50 VERY DENSE > 85 / > 50 Bracketed symbol indicates estimated density based on ease of drilling or other assessment.

Log Column	Symbol	Definition
Hand Penetrometer Readings	300 250	Measures reading in kPa of unconfined compressive strength. Numbers indicate individual test results on representative undisturbed material unless noted otherwise.
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Twin pronged tungsten carbide bit.
	T_{60}	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.
	Soil Origin	The geological origin of the soil can generally be described as: RESIDUAL – soil formed directly from insitu weathering of the underlying rock. No visible structure or fabric of the parent rock. EXTREMELY WEATHERED – soil formed directly from insitu weathering of the underlying rock. Material is of soil strength but retains the structure and/or fabric of the parent rock. ALLUVIAL – soil deposited by creeks and rivers. ESTUARINE – soil deposited in coastal estuaries, including sediments caused by inflowing creeks and rivers, and tidal currents. MARINE – soil deposited in a marine environment. AEOLIAN – soil carried and deposited by wind. COLLUVIAL – soil and rock debris transported downslope by gravity, with or without the assistance of flowing water. Colluvium is usually a thick deposit formed from a landslide. The description 'slopewash' is used for thinner surficial deposits. LITTORAL – beach deposited soil.

Classification of Material Weathering

Term		Abbreviation		Definition
Residual Soil		RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered		XW		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered	Distinctly Weathered (Note 1)	HW	DW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately Weathered		MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable, but shows little or no change of strength from fresh rock.
Slightly Weathered		SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE 1: The term 'Distinctly Weathered' is used where it is not practicable to distinguish between 'Highly Weathered' and 'Moderately Weathered' rock. 'Distinctly Weathered' is defined as follows: *'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'*. There is some change in rock strength.

Rock Material Strength Classification

Term	Abbreviation	Uniaxial Compressive Strength (MPa)	Guide to Strength	
			Point Load Strength Index $Is_{(50)}$ (MPa)	Field Assessment
Very Low Strength	VL	0.6 to 2	0.03 to 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.
Low Strength	L	2 to 6	0.1 to 0.3	Easily scored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium Strength	M	6 to 20	0.3 to 1	Scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High Strength	H	20 to 60	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High Strength	VH	60 to 200	3 to 10	Hand specimen breaks with pick after more than one blow; rock rings under hammer.
Extremely High Strength	EH	> 200	> 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Appendix E: Laboratory Report(s) & COC Documents

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CERTIFICATE OF ANALYSIS 364339

Client Details

Client	JK Environments
Attention	Katrina Taylor
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E37084PT, Bungendore**
Number of Samples	80 Soil, 1 Water
Date samples received	18/10/2024
Date completed instructions received	18/10/2024

Analysis Details

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

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

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

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

Report Details

Date results requested by	28/10/2024
Date of Issue	08/11/2024
Reissue Details	This report replaces R00 created on 28/10/2024 due to: revised report with additional results.

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Authorised by Asbestos Approved Signatory: Nyovan Moonean

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Jack Wallis, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	77	86	83	85

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	85	76	82	79	83

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	82	81	84	79	82

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	76	76	82	78

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	79	78	81	78	74

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	25/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	75	76	79	80

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	78	77	79	78	76

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		364339-75	364339-76	364339-79	364339-80
Your Reference	UNITS	SDUP1	SDUP3	TS	TB
Depth		-	-	-	-
Date Sampled		14.10.2024	15.10.2024	14.10.2024	14.10.2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	25/10/2024	25/10/2024	25/10/2024	25/10/2024
TRH C_6 - C_9	mg/kg	<25	<25	[NA]	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	[NA]	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	[NA]	<25
Benzene	mg/kg	<0.2	<0.2	99%	<0.2
Toluene	mg/kg	<0.5	<0.5	100%	<0.5
Ethylbenzene	mg/kg	<1	<1	102%	<1
m+p-xylene	mg/kg	<2	<2	102%	<2
o-Xylene	mg/kg	<1	<1	102%	<1
Naphthalene	mg/kg	<1	<1	[NA]	<1
Total +ve Xylenes	mg/kg	<1	<1	[NA]	<1
Surrogate aaa-Trifluorotoluene	%	79	79	104	76

svTRH (C10-C40) in Soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	89	89	91	90	89

svTRH (C10-C40) in Soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	90	90	91	89

svTRH (C10-C40) in Soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	89	89	87	90	89

svTRH (C10-C40) in Soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	88	88	89	89	91

svTRH (C10-C40) in Soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	89	88	90	87	86

svTRH (C10-C40) in Soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	89	88	86	88	85

svTRH (C10-C40) in Soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	86	86	89	86	86

svTRH (C10-C40) in Soil			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date extracted	-	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024
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	%	87	87

PAHs in Soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	99	99	98	104	102

PAHs in Soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	105	97	97	98	93

PAHs in Soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	94	104	91	95	101

PAHs in Soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	98	98	100	99	94

PAHs in Soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	100	96	98	98	98

PAHs in Soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	25/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	98	111	99	94

PAHs in Soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	92	95	97	97	100

PAHs in Soil			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date extracted	-	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	25/10/2024
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	%	92	99

Organochlorine Pesticides in soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	108	108	110	114	110

Organochlorine Pesticides in soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	116	106	106	108	102

Organochlorine Pesticides in soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	103	114	100	103	113

Organochlorine Pesticides in soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	106	106	110	107	103

Organochlorine Pesticides in soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	109	107	108	108	107

Organochlorine Pesticides in soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	25/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	111	108	124	108	111

Organochlorine Pesticides in soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	102	103	104	104	111

Organochlorine Pesticides in soil			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date extracted	-	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	25/10/2024
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
Mirex	mg/kg	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	100	108

Organophosphorus Pesticides in Soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	108	108	110	114	110

Organophosphorus Pesticides in Soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	116	106	106	108	102

Organophosphorus Pesticides in Soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	103	114	100	103	113

Organophosphorus Pesticides in Soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	106	106	110	107	103

Organophosphorus Pesticides in Soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	109	107	108	108	107

Organophosphorus Pesticides in Soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	25/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	111	108	124	108	111

Organophosphorus Pesticides in Soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion-Methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenthion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	102	103	104	104	111

Organophosphorus Pesticides in Soil			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date extracted	-	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	25/10/2024
Dichlorvos	mg/kg	<0.1	<0.1
Mevinphos	mg/kg	<0.1	<0.1
Phorate	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Disulfoton	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Parathion-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
Fenthion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Methidathion	mg/kg	<0.1	<0.1
Fenamiphos	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Phosalone	mg/kg	<0.1	<0.1
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Coumaphos	mg/kg	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	100	108

PCBs in Soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	102	102	105	109	106

PCBs in Soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	111	100	102	102	98

PCBs in Soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	98	109	97	99	105

PCBs in Soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	103	101	107	105	100

PCBs in Soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	106	103	104	105	104

PCBs in Soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	25/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	110	105	119	104	101

PCBs in Soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	24/10/2024	24/10/2024	24/10/2024	24/10/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	98	101	100	100	107

PCBs in Soil			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date extracted	-	21/10/2024	21/10/2024
Date analysed	-	24/10/2024	25/10/2024
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 2-Fluorobiphenyl	%	97	106

Acid Extractable metals in soil						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	<4	4	5	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	43	46	34	47
Copper	mg/kg	4	10	8	6	4
Lead	mg/kg	9	16	23	16	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	10	11	9	9
Zinc	mg/kg	6	10	9	10	11

Acid Extractable metals in soil						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	<4	4	7	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	34	27	47	55	18
Copper	mg/kg	5	7	11	6	9
Lead	mg/kg	15	14	21	21	13
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	8	14	10	10
Zinc	mg/kg	10	13	18	20	12

Acid Extractable metals in soil						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	5	<4	5	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	46	25	26	33	19
Copper	mg/kg	10	4	8	25	8
Lead	mg/kg	14	11	10	12	7
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	16	5	13	16	7
Zinc	mg/kg	20	8	18	15	9

Acid Extractable metals in soil						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	<4	7	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	23	42	30	26	25
Copper	mg/kg	7	11	8	6	11
Lead	mg/kg	11	21	8	14	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	17	10	8	8
Zinc	mg/kg	10	20	9	7	10

Acid Extractable metals in soil						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	<4	7	<4	4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	38	30	29	31
Copper	mg/kg	4	16	13	22	20
Lead	mg/kg	8	11	12	16	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	21	8	15	18
Zinc	mg/kg	6	18	10	20	18

Acid Extractable metals in soil						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	<4	<4	6	4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	22	21	33	33	39
Copper	mg/kg	7	7	15	10	19
Lead	mg/kg	13	12	15	25	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	7	6	14	13	17
Zinc	mg/kg	12	9	13	10	12

Acid Extractable metals in soil						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024	23/10/2024	23/10/2024	23/10/2024
Arsenic	mg/kg	<4	4	<4	6	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	32	25	23	33	31
Copper	mg/kg	12	9	2	13	13
Lead	mg/kg	19	15	11	21	14
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	13	9	4	14	9
Zinc	mg/kg	12	13	6	13	20

Acid Extractable metals in soil			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date prepared	-	21/10/2024	21/10/2024
Date analysed	-	23/10/2024	23/10/2024
Arsenic	mg/kg	4	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	34	42
Copper	mg/kg	7	14
Lead	mg/kg	13	19
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	12	21
Zinc	mg/kg	15	26

Moisture						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	12	9.3	5.5	5.8	5.1

Moisture						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	7.1	17	5.3	5.1	9.2

Moisture						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	10	4.3	12	19	6.5

Moisture						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	11	7.3	6.1	6.2	5.5

Moisture						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	5.3	10	4.5	12	10

Moisture						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	6.5	6.8	11	7.4	16

Moisture						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	21/10/2024	21/10/2024	21/10/2024	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024	22/10/2024	22/10/2024	22/10/2024
Moisture	%	10	9.1	5.5	13	14

Moisture			
Our Reference		364339-75	364339-76
Your Reference	UNITS	SDUP1	SDUP3
Depth		-	-
Date Sampled		14.10.2024	15.10.2024
Type of sample		Soil	Soil
Date prepared	-	21/10/2024	21/10/2024
Date analysed	-	22/10/2024	22/10/2024
Moisture	%	10	7.7

Asbestos ID - soils NEPM						
Our Reference		364339-1	364339-4	364339-6	364339-8	364339-10
Your Reference	UNITS	BH1	BH2	BH3	BH4	BH5
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16/10/2024	15.10.2024	15.10.2024	15.10.2024	15.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	622.15	677.72	729.23	732.42	683
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM						
Our Reference		364339-12	364339-14	364339-16	364339-18	364339-20
Your Reference	UNITS	BH6	BH7	BH8	BH9	BH10
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	14.10.2024	15.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	711.59	615.81	803.83	808.31	689.63
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM						
Our Reference		364339-23	364339-25	364339-27	364339-29	364339-31
Your Reference	UNITS	BH11	BH12	BH13	BH14	BH15
Depth		0-0.4	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		14.10.2024	16.10.2024	14.10.2024	16.10.2024	16.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	818.17	726.75	803.25	797.03	709.25
Sample Description	-	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM						
Our Reference		364339-33	364339-36	364339-38	364339-40	364339-42
Your Reference	UNITS	BH16	BH17	BH18	BH19	BH20
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	15.10.2024	16.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	699.51	668.93	740.73	834.65	830.18
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM						
Our Reference		364339-44	364339-46	364339-48	364339-50	364339-52
Your Reference	UNITS	BH21	BH22	BH23	BH24	BH25
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	544.69	722.46	766.37	630.07	793.48
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM						
Our Reference		364339-54	364339-56	364339-58	364339-60	364339-62
Your Reference	UNITS	BH26	BH27	BH28	BH29	BH30
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		16.10.2024	17.10.2024	15.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	371.57	700.6	815.08	583.46	928.52
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM						
Our Reference		364339-64	364339-67	364339-69	364339-71	364339-73
Your Reference	UNITS	BH31	BH32	BH33	BH34	BH35
Depth		0-0.2	0-0.2	0-0.2	0-0.2	0-0.2
Date Sampled		17.10.2024	17.10.2024	17.10.2024	17.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	28/10/2024	28/10/2024	28/10/2024	28/10/2024	28/10/2024
Sample mass tested	g	693.99	860.94	732.51	806.32	624.79
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown clayey soil & rocks	Brown fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

vTRH(C6-C10)/BTEXN in Water		
Our Reference		364339-81
Your Reference	UNITS	FR1-SPT
Depth		-
Date Sampled		17.10.2024
Type of sample		Water
Date extracted	-	24/10/2024
Date analysed	-	24/10/2024
TRH C_6 - C_9	µg/L	53
TRH C_6 - C_{10}	µg/L	55
TRH C_6 - C_{10} less BTEX (F1)	µg/L	55
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	101
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	98

svTRH (C10-C40) in Water		
Our Reference		364339-81
Your Reference	UNITS	FR1-SPT
Depth		-
Date Sampled		17.10.2024
Type of sample		Water
Date extracted	-	21/10/2024
Date analysed	-	22/10/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	116

PAHs in Water		
Our Reference		364339-81
Your Reference	UNITS	FR1-SPT
Depth		-
Date Sampled		17.10.2024
Type of sample		Water
Date extracted	-	21/10/2024
Date analysed	-	23/10/2024
Naphthalene	µg/L	<0.1
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	<0.1
Surrogate p-Terphenyl-d14	%	92

Metals in Waters - Acid extractable		
Our Reference		364339-81
Your Reference	UNITS	FR1-SPT
Depth		-
Date Sampled		17.10.2024
Type of sample		Water
Date prepared	-	22/10/2024
Date analysed	-	22/10/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	0.3
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	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 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/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.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
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	Water samples are analysed directly 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.
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-15	364339-4
Date extracted	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			24/10/2024	1	24/10/2024	24/10/2024		24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	80	84
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	80	84
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	83	86
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	86	89
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	80	84
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	76	80
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	86	90
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	82	1	78	76	3	80	79

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date extracted	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	24/10/2024	24/10/2024		24/10/2024	24/10/2024
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	23	<25	<25	0	88	79
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	23	<25	<25	0	88	79
Benzene	mg/kg	0.2	Org-023	[NT]	23	<0.2	<0.2	0	90	81
Toluene	mg/kg	0.5	Org-023	[NT]	23	<0.5	<0.5	0	93	84
Ethylbenzene	mg/kg	1	Org-023	[NT]	23	<1	<1	0	88	79
m+p-xylene	mg/kg	2	Org-023	[NT]	23	<2	<2	0	84	76
o-Xylene	mg/kg	1	Org-023	[NT]	23	<1	<1	0	94	85
Naphthalene	mg/kg	1	Org-023	[NT]	23	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	23	82	82	0	84	76

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	24/10/2024	24/10/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	44	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	44	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	44	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	44	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	44	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	44	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	44	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	44	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	44	79	79	0	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	25/10/2024	25/10/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	64	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	64	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	64	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	64	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	64	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	64	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	64	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	64	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	64	78	75	4	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-15	364339-4
Date extracted	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			22/10/2024	1	22/10/2024	22/10/2024		22/10/2024	23/10/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	82	115
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	82	115
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	86	98
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	82	115
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	82	115
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	86	98
Surrogate o-Terphenyl	%		Org-020	89	1	89	88	1	102	92

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date extracted	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	22/10/2024	22/10/2024		23/10/2024	23/10/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	23	<50	<50	0	81	107
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	83	99
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	86	107
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	23	<50	<50	0	81	107
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	83	99
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	86	107
Surrogate o-Terphenyl	%		Org-020	[NT]	23	89	88	1	106	91

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	23/10/2024	23/10/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	44	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	44	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	44	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	44	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	44	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	44	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	44	89	89	0	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	23/10/2024	23/10/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	64	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	64	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	64	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	64	86	88	2	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-15	364339-4
Date extracted	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			24/10/2024	1	24/10/2024	24/10/2024		24/10/2024	24/10/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	112	88
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	114	90
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	86
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	108	86
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	108	80
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	110	84
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	112	88
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	96	78
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	106	1	99	97	2	111	98

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date extracted	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	24/10/2024	24/10/2024		24/10/2024	24/10/2024
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	110	90
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	112	92
Fluorene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	106	86
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	108	88
Anthracene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	98	78
Pyrene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	106	86
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	110	90
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	23	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	23	<0.05	<0.05	0	92	76
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	23	94	95	1	110	97

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	24/10/2024	24/10/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	44	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	44	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	44	100	99	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	24/10/2024	24/10/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	64	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	64	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	64	92	105	13	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-15	364339-4
Date extracted	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			24/10/2024	1	24/10/2024	24/10/2024		24/10/2024	24/10/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	114	92
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	114	92
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	108	88
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	94	76
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	94
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	104	80
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	94
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	86
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	116	96
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	112	92
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	118	1	108	108	0	125	109

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date extracted	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	24/10/2024	24/10/2024		24/10/2024	24/10/2024
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	120	92
HCB	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	110	90
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	102	90
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	92	76
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	116	96
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	100	84
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	116	94
Endrin	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	90	78
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	114	96
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	102	88
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	23	103	104	1	121	105

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	24/10/2024	24/10/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	44	109	109	0	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	24/10/2024	24/10/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	64	102	114	11	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-15	364339-4
Date extracted	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			24/10/2024	1	24/10/2024	24/10/2024		24/10/2024	24/10/2024
Dichlorvos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	124	96
Mevinphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[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]
Disulfoton	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion-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	104	82
Fenitrothion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	116	94
Malathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	122	98
Chlorpyriphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	106	86
Fenthion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	82
Bromophos-ethyl	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	<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	110	96
Phosalone	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	118	1	108	108	0	125	109

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date extracted	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	24/10/2024	24/10/2024		24/10/2024	24/10/2024
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	116	92
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	102	86
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	108	90
Malathion	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	114	98
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	104	86
Fenthion	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	100	82
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	106	92
Phosalone	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	23	103	104	1	121	105

QUALITY CONTROL: Organophosphorus Pesticides in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	24/10/2024	24/10/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	44	109	109	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides in Soil				Duplicate					Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	24/10/2024	24/10/2024		[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Mevinphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Phorate	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Disulfoton	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Parathion-Methyl	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Chlorpyriphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fenthion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Methidathion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Fenamiphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Phosalone	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Coumaphos	mg/kg	0.1	Org-022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	64	102	114	11	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-15	364339-4
Date extracted	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			24/10/2024	1	24/10/2024	24/10/2024		24/10/2024	24/10/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	114	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	113	1	102	102	0	120	105

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date extracted	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	24/10/2024	24/10/2024		24/10/2024	24/10/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	112	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	23	98	101	3	117	101

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	24/10/2024	24/10/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	44	106	107	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	24/10/2024	24/10/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	64	98	112	13	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-15	364339-4
Date prepared	-			21/10/2024	1	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			23/10/2024	1	23/10/2024	23/10/2024		23/10/2024	23/10/2024
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	109	100
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	101	97
Chromium	mg/kg	1	Metals-020	<1	1	11	14	24	102	86
Copper	mg/kg	1	Metals-020	<1	1	4	5	22	100	103
Lead	mg/kg	1	Metals-020	<1	1	9	11	20	103	98
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	120	121
Nickel	mg/kg	1	Metals-020	<1	1	5	6	18	101	100
Zinc	mg/kg	1	Metals-020	<1	1	6	7	15	97	94

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-16	364339-46
Date prepared	-			[NT]	23	21/10/2024	21/10/2024		21/10/2024	21/10/2024
Date analysed	-			[NT]	23	23/10/2024	23/10/2024		23/10/2024	23/10/2024
Arsenic	mg/kg	4	Metals-020	[NT]	23	5	6	18	110	85
Cadmium	mg/kg	0.4	Metals-020	[NT]	23	<0.4	<0.4	0	103	91
Chromium	mg/kg	1	Metals-020	[NT]	23	46	47	2	105	90
Copper	mg/kg	1	Metals-020	[NT]	23	10	10	0	105	94
Lead	mg/kg	1	Metals-020	[NT]	23	14	17	19	106	92
Mercury	mg/kg	0.1	Metals-021	[NT]	23	<0.1	<0.1	0	109	114
Nickel	mg/kg	1	Metals-020	[NT]	23	16	13	21	103	100
Zinc	mg/kg	1	Metals-020	[NT]	23	20	14	35	99	96

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	44	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	44	23/10/2024	23/10/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	44	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	44	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	44	17	25	38	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	44	4	3	29	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	44	8	11	32	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	44	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	44	4	6	40	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	44	6	8	29	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	64	21/10/2024	21/10/2024		[NT]	[NT]
Date analysed	-			[NT]	64	23/10/2024	23/10/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	64	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	64	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	64	32	24	29	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	64	12	11	9	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	64	19	14	30	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	64	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	64	13	12	8	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	64	12	12	0	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			24/10/2024	[NT]	[NT]	[NT]	[NT]	24/10/2024	[NT]
Date analysed	-			24/10/2024	[NT]	[NT]	[NT]	[NT]	24/10/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	102	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	102	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	102	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	102	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate Toluene-d8	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	96	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/10/2024	[NT]	[NT]	[NT]	[NT]	21/10/2024	[NT]
Date analysed	-			22/10/2024	[NT]	[NT]	[NT]	[NT]	22/10/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	88	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	94	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	98	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PAHs in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			21/10/2024	[NT]	[NT]	[NT]	[NT]	21/10/2024	[NT]
Date analysed	-			23/10/2024	[NT]	[NT]	[NT]	[NT]	23/10/2024	[NT]
Naphthalene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	73	[NT]
Acenaphthylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
Fluorene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Phenanthrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Benzo(a)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	85	[NT]
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	µg/L	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	94	[NT]	[NT]	[NT]	[NT]	83	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/10/2024	[NT]	[NT]	[NT]	[NT]	22/10/2024	[NT]
Date analysed	-			22/10/2024	[NT]	[NT]	[NT]	[NT]	22/10/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	95	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	87	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	90	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	90	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	90	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	111	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	91	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	94	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Note: All samples analysed as received. However, sample 364339-54 is below the minimum recommended 500mL sample volume as per National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013.

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SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Katrina Taylor

Sample Login Details

Your reference	E37084PT, Bungendore
Envirolab Reference	364339
Date Sample Received	18/10/2024
Date Instructions Received	18/10/2024
Date Results Expected to be Reported	28/10/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	80 Soil, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	15
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

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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	Asbestos ID - soils NEPM	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	On Hold
BH1 -0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH1-0.8-0.95													✓
BH1-1.8-1.95													✓
BH2-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH2-0.8-0.95													✓
BH3-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH3-0.8-0.95													✓
BH4-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH4-0.8-0.95													✓
BH5-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH5-0.8-0.95													✓
BH6-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH6-0.8-0.95													✓
BH7-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH7-0.8-0.95													✓
BH8-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH8-0.8-0.95													✓
BH9-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH9-0.8-0.95													✓
BH10-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH10-0.8-0.95													✓
BH10-1.7-1.8													✓
BH11-0-0.4	✓	✓	✓	✓	✓	✓	✓	✓					
BH11-0.7-0.95													✓
BH12-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH12 -0.8-0.													✓
BH13-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH13-0.8-0.95													✓
BH14-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH14-0.8-0.95													✓
BH15-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH15-0.8-0.95													✓

Envirolab Services Pty Ltd
ABN 37 112 535 645
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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	Asbestos ID - soils NEPM	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	On Hold
BH16-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH16-0.8-0.95													✓
BH16-1.8-1.95													✓
BH17-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH17-0.8-0.95													✓
BH18-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH18-0.8-0.95													✓
BH19-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH19-0.8-0.95													✓
BH20-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH20-0.8-0.95													✓
BH21-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH21-0.8-0.95													✓
BH22-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH22-0.8-0.95													✓
BH23-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH23-0.8-0.9													✓
BH24-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH24 -0.8-0.													✓
BH25-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH25-0.8-0.95													✓
BH26-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH26-0.8-0.95													✓
BH27-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH27-0.8-0.95													✓
BH28-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH28-0.8-0.9													✓
BH29-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH29-0.8-0.95													✓
BH30-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH30-0.8-0.95													✓
BH31-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					

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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	Asbestos ID - soils NEPM	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	PAHs in Water	Metals in Waters -Acid extractable	On Hold
BH31-0.8-0.95													✓
BH31-1.8-1.95													✓
BH32-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH32-0.8-0.95													✓
BH33-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH33-0.8-0.95													✓
BH34-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH34-0.8-0.95													✓
BH35-0-0.2	✓	✓	✓	✓	✓	✓	✓	✓					
BH35-0.8-0.95													✓
SDUP1	✓	✓	✓	✓	✓	✓	✓						
SDUP3	✓	✓	✓	✓	✓	✓	✓						
SDUP5													✓
SDUP6													✓
TS	✓												
TB	✓												
FR1-SPT									✓	✓	✓	✓	

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.

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E37084PT Date Results Required: STANDARD Page: 1 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Katrina Taylor

Location:	Bungendore, NSW	Sample Preserved in Esky on Ice
Sampler:	LR	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 3	Asbestos (detection)	BTEX							
16.10.2024	1	BH1	0-0.2	G, A		Silty Clay	X											
16.10.2024	2	BH1	0.8-0.95	G, A		Silty Clay												
16.10.2024	3	BH1	1.8-1.95	G, A		Silty Clay												
15.10.2024	4	BH2	0-0.2	G, A		Silty Clay	X											
15.10.2024	5	BH2	0.8-0.95	G, A		Silty Clay												
15.10.2024	6	BH3	0-0.2	G, A		Silty Clay	X											
15.10.2024	7	BH3	0.8-0.95	G, A		Silty Clay												
15.10.2024	8	BH4	0-0.2	G, A		F: Silty Clay	X											
15.10.2024	9	BH4	0.8-0.95	G, A		Silty Clay												
15.10.2024	10	BH5	0-0.2	G, A		Silty Clay	X											
15.10.2024	11	BH5	0.8-0.95	G, A		Silty Clay												
16.10.2024	12	BH6	0-0.2	G, A		Silty Clay	X											
16.10.2024	13	BH6	0.8-0.95	G, A		Silty Clay												
15.10.2024	14	BH7	0-0.2	G, A		Silty Clay	X											
15.10.2024	15	BH7	0.8-0.95	G, A		XW: Sandstone												
14.10.2024	16	BH8	0-0.2	G, A		Silty Clay	X											
14.10.2024	17	BH8	0.8-0.95	G, A		Silty Clay												
15.10.2024	18	BH9	0-0.2	G, A		Silty Clay	X											
15.10.2024	19	BH9	0.8-0.95	G, A		Silty Clay												
16.10.2024	20	BH10	0-0.2	G, A		F: Silty Clay	X											
16.10.2024	21	BH10	0.8-0.95	G, A		F: Silty Clay												
16.10.2024	22	BH10	1.7-1.8	G, A		Silty Clay												
14.10.2024	23	BH11	0-0.4	G, A		Silty Clay	X											
14.10.2024	24	BH11	0.7-0.95	G, A		Silty Clay												
16.10.2024	25	BH12	0-0.2	G, A		Silty Clay	X											

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

Job No: 364339
Date Received: 18/10/24
Time Received: 1630
Received By: KWu
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

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

Relinquished By: LR	Date:	Time:	Received By: KWu	Date: 18/10/24

Pick 1000.3

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E37084PT Date Results Required: STANDARD Page: 2 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Katrina Taylor

Location:	Bungendore, NSW	Sample Preserved in Esky on Ice
Sampler:	LR	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
16.10.2024	26	BH12	0.8-0.95	G, A		Silty Clay												
14.10.2024	27	BH13	0-0.2	G, A		Silty Clay	X											
14.10.2024	28	BH13	0.8-0.95	G, A		Silty Clay												
16.10.2024	29	BH14	0-0.2	G, A		Silty Clay	X											
16.10.2024	30	BH14	0.8-0.95	G, A		Silty Clay												
16.10.2024	31	BH15	0-0.2	G, A		Silty Clay	X											
16.10.2024	32	BH15	0.8-0.95	G, A		Silty Clay												
16.10.2024	33	BH16	0-0.2	G, A		F: Silty Clay	X											
16.10.2024	34	BH16	0.8-0.95	G, A		Silty Clay												
16.10.2024	35	BH16	1.8-1.95	G, A		Silty Clay												
15.10.2024	36	BH17	0-0.2	G, A		Silty Clay	X											
15.10.2024	37	BH17	0.8-0.95	G, A		Silty Clay												
16.10.2024	38	BH18	0-0.2	G, A		Silty Clay	X											
16.10.2024	39	BH18	0.8-0.95	G, A		Silty Clay												
15.10.2024	40	BH19	0-0.2	G, A		Silty Clay	X											
15.10.2024	41	BH19	0.8-0.95	G, A		Silty Clay												
17.10.2024	42	BH20	0-0.2	G, A		Silty Clay	X											
17.10.2024	43	BH20	0.8-0.95	G, A		XW: Sandstone												
17.10.2024	44	BH21	0-0.2	G, A		Silty Clay	X											
17.10.2024	45	BH21	0.8-0.95	G, A		XW: Sandstone												
17.10.2024	46	BH22	0-0.2	G, A		Silty Clay	X											
17.10.2024	47	BH22	0.8-0.95	G, A		Silty Clay												
17.10.2024	48	BH23	0-0.2	G, A		Silty Clay	X											
17.10.2024	49	BH23	0.8-0.9	G, A		Silty Clay												
17.10.2024	50	BH24	0-0.2	G, A		Silty Clay	X											

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

Relinquished By: LR	Date:	Time:	Received By: KWn	18/10/24

364339
18/10/24
KWn

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD	JKE Job Number: E37084PT	JKEnvironments
12 ASHLEY STREET		REAR OF 115 WICKS ROAD
CHATSWOOD NSW 2067	Date Results Required: STANDARD	MACQUARIE PARK, NSW 2113
P: (02) 99106200		P: 02-9888 5000 F: 02-9888 5001
F: (02) 99106201	Page: 3 of 4	Attention: Katrina Taylor
Attention: Aileen		

Location:	Bungendore, NSW						Sample Preserved in Esky on Ice											
Sampler:	LR						Tests Required											
Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
17.10.2024	51	BH24	0.8-0.95	G, A		Silty Clay												
17.10.2024	52	BH25	0-0.2	G, A		Silty Clay	X											
17.10.2024	53	BH25	0.8-0.95	G, A		Silty Clay												
16.10.2024	54	BH26	0-0.2	G, A		Silty Clay	X											
16.10.2024	55	BH26	0.8-0.95	G, A		Silty Clay												
17.10.2024	56	BH27	0-0.2	G, A		Silty Clay	X											
17.10.2024	57	BH27	0.8-0.95	G, A		Silty Clay												
15.10.2024	58	BH28	0-0.2	G, A		Silty Clay	X											
15.10.2024	59	BH28	0.8-0.9	G, A		XW: Sandstone												
17.10.2024	60	BH29	0-0.2	G, A		Silty Clay	X											
17.10.2024	61	BH29	0.8-0.95	G, A		Silty Clay												
17.10.2024	62	BH30	0-0.2	G, A		Silty Clay	X											
17.10.2024	63	BH30	0.8-0.95	G, A		Silty Clay												
17.10.2024	64	BH31	0-0.2	G, A		Silty Clay	X											
17.10.2024	65	BH31	0.8-0.95	G, A		Silty Clay												
17.10.2024	66	BH31	1.8-1.95	G, A		Silty Clay												
17.10.2024	67	BH32	0-0.2	G, A		Silty Clay	X											
17.10.2024	68	BH32	0.8-0.95	G, A		Silty Clay												
17.10.2024	69	BH33	0-0.2	G, A		Silty Clay	X											
17.10.2024	70	BH33	0.8-0.95	G, A		Silty Clay												
17.10.2024	71	BH34	0-0.2	G, A		F: Silty Clay	X											
17.10.2024	72	BH34	0.8-0.95	G, A		Silty Clay												
17.10.2024	73	BH35	0-0.2	G, A		Silty Clay	X											
17.10.2024	74	BH35	0.8-0.95	G, A		Silty Clay												
14.10.2024	75	SDUP1	-	G		Silty Clay		X										

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

Relinquished By: LR	Date:	Time:	Received By:	Date:
			KWu	18/10/24

364339
18/10/24
KWu

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E37084PT Date Results Required: STANDARD Page: 4 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Katrina Taylor

Location:	Bungendore, NSW	Sample Preserved in Esky on Ice
Sampler:	LR	Tests Required

Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX						
14.10.2024	5/6	SDUP2	-	G		Silty Clay		X	[redacted]									
15.10.2024	76	SDUP3	-	G		Silty Clay		X										
15.10.2024	5/6	SDUP4	-	G		Silty Clay		X	[redacted]									
16.10.2024	77	SDUP5	-	G		Silty Clay												
16.10.2024	78	SDUP6	-	G		F: Silty Clay												
14.10.2024	79	TS	-	V		Trip Spike						X						
14.10.2024	80	TB	-	V		Trip Blank				X								
17.10.2024	81	FR1-SPT	-	#		Rinsate				X								

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

Relinquished By: LR	Date:	Time:	Received By: KWn	Date: 18/10/24

364339
18/10/24
KWn

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CERTIFICATE OF ANALYSIS 364339-A

Client Details

Client	JK Environments
Attention	Katrina Taylor
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E37084PT, Bungendore**
Number of Samples	Additional analysis
Date samples received	18/10/2024
Date completed instructions received	30/10/2024

Analysis Details

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

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

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

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

Report Details

Date results requested by	06/11/2024
Date of Issue	05/11/2024

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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
Giovanni Agosti, Group Technical Manager
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		364339-A-7	364339-A-9	364339-A-19	364339-A-21	364339-A-24
Your Reference	UNITS	BH3	BH4	BH9	BH10	BH11
Depth		0.8-0.95	0.8-0.95	0.8-0.95	0.8-0.95	0.7-0.95
Date Sampled		15.10.2024	15.10.2024	15.10.2024	16.10.2024	14.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	01/11/2024	01/11/2024	01/11/2024	01/11/2024	01/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	94	110	105	109

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		364339-A-34	364339-A-37	364339-A-59	364339-A-72
Your Reference	UNITS	BH16	BH17	BH28	BH34
Depth		0.8-0.95	0.8-0.95	0.8-0.9	0.8-0.95
Date Sampled		16.10.2024	15.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	01/11/2024	01/11/2024	01/11/2024	01/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	107	108	103

svTRH (C10-C40) in Soil						
Our Reference		364339-A-7	364339-A-9	364339-A-19	364339-A-21	364339-A-24
Your Reference	UNITS	BH3	BH4	BH9	BH10	BH11
Depth		0.8-0.95	0.8-0.95	0.8-0.95	0.8-0.95	0.7-0.95
Date Sampled		15.10.2024	15.10.2024	15.10.2024	16.10.2024	14.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	01/11/2024	01/11/2024	01/11/2024	01/11/2024	01/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	86	84	82	83	84

svTRH (C10-C40) in Soil					
Our Reference		364339-A-34	364339-A-37	364339-A-59	364339-A-72
Your Reference	UNITS	BH16	BH17	BH28	BH34
Depth		0.8-0.95	0.8-0.95	0.8-0.9	0.8-0.95
Date Sampled		16.10.2024	15.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	01/11/2024	01/11/2024	01/11/2024	01/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50
Surrogate o-Terphenyl	%	83	84	83	84

PAHs in Soil						
Our Reference		364339-A-7	364339-A-9	364339-A-19	364339-A-21	364339-A-24
Your Reference	UNITS	BH3	BH4	BH9	BH10	BH11
Depth		0.8-0.95	0.8-0.95	0.8-0.95	0.8-0.95	0.7-0.95
Date Sampled		15.10.2024	15.10.2024	15.10.2024	16.10.2024	14.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	125	118	129	122	100

PAHs in Soil					
Our Reference		364339-A-34	364339-A-37	364339-A-59	364339-A-72
Your Reference	UNITS	BH16	BH17	BH28	BH34
Depth		0.8-0.95	0.8-0.95	0.8-0.9	0.8-0.95
Date Sampled		16.10.2024	15.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	113	122	115	127

Acid Extractable metals in soil						
Our Reference		364339-A-7	364339-A-9	364339-A-19	364339-A-21	364339-A-24
Your Reference	UNITS	BH3	BH4	BH9	BH10	BH11
Depth		0.8-0.95	0.8-0.95	0.8-0.95	0.8-0.95	0.7-0.95
Date Sampled		15.10.2024	15.10.2024	15.10.2024	16.10.2024	14.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	04/11/2024	04/11/2024	04/11/2024	04/11/2024	04/11/2024
Arsenic	mg/kg	4	5	<4	<4	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	32	39	19	29	33
Copper	mg/kg	16	13	4	10	17
Lead	mg/kg	11	10	5	19	11
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	19	12	5	15	18
Zinc	mg/kg	16	14	7	9	14

Acid Extractable metals in soil					
Our Reference		364339-A-34	364339-A-37	364339-A-59	364339-A-72
Your Reference	UNITS	BH16	BH17	BH28	BH34
Depth		0.8-0.95	0.8-0.95	0.8-0.9	0.8-0.95
Date Sampled		16.10.2024	15.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	04/11/2024	04/11/2024	04/11/2024	04/11/2024
Arsenic	mg/kg	5	5	8	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	38	30	39	31
Copper	mg/kg	20	26	30	22
Lead	mg/kg	15	12	16	12
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1
Nickel	mg/kg	14	25	18	24
Zinc	mg/kg	16	29	23	16

Moisture						
Our Reference		364339-A-7	364339-A-9	364339-A-19	364339-A-21	364339-A-24
Your Reference	UNITS	BH3	BH4	BH9	BH10	BH11
Depth		0.8-0.95	0.8-0.95	0.8-0.95	0.8-0.95	0.7-0.95
Date Sampled		15.10.2024	15.10.2024	15.10.2024	16.10.2024	14.10.2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	01/11/2024	01/11/2024	01/11/2024	01/11/2024	01/11/2024
Moisture	%	23	21	14	14	19

Moisture					
Our Reference		364339-A-34	364339-A-37	364339-A-59	364339-A-72
Your Reference	UNITS	BH16	BH17	BH28	BH34
Depth		0.8-0.95	0.8-0.95	0.8-0.9	0.8-0.95
Date Sampled		16.10.2024	15.10.2024	15.10.2024	17.10.2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	31/10/2024	31/10/2024	31/10/2024	31/10/2024
Date analysed	-	01/11/2024	01/11/2024	01/11/2024	01/11/2024
Moisture	%	17	17	18	22

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-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.

Method ID	Methodology Summary
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	-			31/10/2024	7	31/10/2024	31/10/2024		31/10/2024	[NT]
Date analysed	-			01/11/2024	7	01/11/2024	01/11/2024		01/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	7	<25	<25	0	116	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	7	<25	<25	0	116	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	7	<0.2	<0.2	0	117	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	7	<0.5	<0.5	0	113	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	118	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	7	<2	<2	0	115	[NT]
o-Xylene	mg/kg	1	Org-023	<1	7	<1	<1	0	115	[NT]
Naphthalene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	96	7	108	107	1	115	[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	-			31/10/2024	7	31/10/2024	31/10/2024		31/10/2024	[NT]
Date analysed	-			01/11/2024	7	01/11/2024	01/11/2024		01/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	7	<50	<50	0	108	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	7	<100	<100	0	107	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	7	<100	<100	0	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	7	<50	<50	0	108	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	7	<100	<100	0	107	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	7	<100	<100	0	100	[NT]
Surrogate o-Terphenyl	%		Org-020	87	7	86	85	1	93	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date extracted	-			31/10/2024	7	31/10/2024	31/10/2024		31/10/2024	[NT]
Date analysed	-			31/10/2024	7	31/10/2024	31/10/2024		31/10/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	98	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	100	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	86	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	100	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	88	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	96	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	84	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	7	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	7	<0.05	<0.05	0	98	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	80	7	125	115	8	119	[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	-			31/10/2024	7	31/10/2024	31/10/2024		31/10/2024	[NT]
Date analysed	-			04/11/2024	7	04/11/2024	04/11/2024		04/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	7	4	4	0	104	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	7	<0.4	<0.4	0	99	[NT]
Chromium	mg/kg	1	Metals-020	<1	7	32	32	0	100	[NT]
Copper	mg/kg	1	Metals-020	<1	7	16	17	6	104	[NT]
Lead	mg/kg	1	Metals-020	<1	7	11	11	0	103	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	7	<0.1	<0.1	0	100	[NT]
Nickel	mg/kg	1	Metals-020	<1	7	19	19	0	100	[NT]
Zinc	mg/kg	1	Metals-020	<1	7	16	16	0	96	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Samples received in good order: Holding time exceedance

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SAMPLE RECEIPT ADVICE

Client Details

Client	JK Environments
Attention	Katrina Taylor

Sample Login Details

Your reference	E37084PT, Bungendore
Envirolab Reference	364339-A
Date Sample Received	18/10/2024
Date Instructions Received	30/10/2024
Date Results Expected to be Reported	06/11/2024

Sample Condition

Samples received in appropriate condition for analysis	Holding time exceedance
No. of Samples Provided	Additional analysis
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	15
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Please contact the laboratory within 24 hours if you wish to cancel the aformentioned testing. Otherwise testing will proceed as per the COC and hence invoiced accordingly.

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	Acid Extractable metalsin soil	On Hold
BH1 -0-0.2					✓
BH1-0.8-0.95					✓
BH1-1.8-1.95					✓
BH2-0-0.2					✓
BH2-0.8-0.95					✓
BH3-0-0.2					✓
BH3-0.8-0.95	✓	✓	✓	✓	
BH4-0-0.2					✓
BH4-0.8-0.95	✓	✓	✓	✓	
BH5-0-0.2					✓
BH5-0.8-0.95					✓
BH6-0-0.2					✓
BH6-0.8-0.95					✓
BH7-0-0.2					✓
BH7-0.8-0.95					✓
BH8-0-0.2					✓
BH8-0.8-0.95					✓
BH9-0-0.2					✓
BH9-0.8-0.95	✓	✓	✓	✓	
BH10-0-0.2					✓
BH10-0.8-0.95	✓	✓	✓	✓	
BH10-1.7-1.8					✓
BH11-0-0.4					✓
BH11-0.7-0.95	✓	✓	✓	✓	
BH12-0-0.2					✓
BH12 -0.8-0.					✓
BH13-0-0.2					✓
BH13-0.8-0.95					✓
BH14-0-0.2					✓
BH14-0.8-0.95					✓
BH15-0-0.2					✓
BH15-0.8-0.95					✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	On Hold
BH16-0-0.2					✓
BH16-0.8-0.95	✓	✓	✓	✓	
BH16-1.8-1.95					✓
BH17-0-0.2					✓
BH17-0.8-0.95	✓	✓	✓	✓	
BH18-0-0.2					✓
BH18-0.8-0.95					✓
BH19-0-0.2					✓
BH19-0.8-0.95					✓
BH20-0-0.2					✓
BH20-0.8-0.95					✓
BH21-0-0.2					✓
BH21-0.8-0.95					✓
BH22-0-0.2					✓
BH22-0.8-0.95					✓
BH23-0-0.2					✓
BH23-0.8-0.9					✓
BH24-0-0.2					✓
BH24 -0.8-0.					✓
BH25-0-0.2					✓
BH25-0.8-0.95					✓
BH26-0-0.2					✓
BH26-0.8-0.95					✓
BH27-0-0.2					✓
BH27-0.8-0.95					✓
BH28-0-0.2					✓
BH28-0.8-0.9	✓	✓	✓	✓	
BH29-0-0.2					✓
BH29-0.8-0.95					✓
BH30-0-0.2					✓
BH30-0.8-0.95					✓
BH31-0-0.2					✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	On Hold
BH31-0.8-0.95					✓
BH31-1.8-1.95					✓
BH32-0-0.2					✓
BH32-0.8-0.95					✓
BH33-0-0.2					✓
BH33-0.8-0.95					✓
BH34-0-0.2					✓
BH34-0.8-0.95	✓	✓	✓	✓	
BH35-0-0.2					✓
BH35-0.8-0.95					✓
SDUP1					✓
SDUP3					✓
SDUP5					✓
SDUP6					✓
TS					✓
TB					✓
FR1-SPT					✓

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.

Anna Bui

From: Katrina Taylor <KTaylor@jkenvironments.com.au>
Sent: Wednesday, 30 October 2024 3:36 PM
To: Envirolab Sydney Sample Receipt
Subject: FW: Results for Registration 364339 E37084PT, Bungendore
Attachments: 364339-[R00].pdf; 364339-COC.pdf; JK Environment Soil for Envirolab 364339.xlsx; 364339.Excel.xlsx

Afternoon,

Please schedule the following on standard TA:

#3

7 BH3 (0.8-0.95)
9 BH4 (0.8-0.95)
19 BH9 (0.8-0.95)
21 BH10 (0.8-0.95)
24 BH11 (0.7-0.95)
34 BH16 (0.8-0.95)
37 BH17 (0.8-0.95)
59 BH28 (0.8-0.9)
72 BH34 (0.8-0.95)

ELN REF: 364339-A
TAT: STANDARD
DUE: 6/11/24
AB-

Thank you.

Regards
Katrina Taylor
Associate | Environmental Scientist
NSW Licensed Asbestos Assessor

T: +61 2 9888 5000
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PO Box 976
NORTH RYDE BC NSW 1670
115 Wicks Road
MACQUARIE PARK NSW 2113

JKEnvironments

From: Nancy Zhang <NZhang@envirolab.com.au>
Sent: Monday, 28 October 2024 3:48 PM
To: Katrina Taylor <KTaylor@jkenvironments.com.au>
Subject: Results for Registration 364339 E37084PT, Bungendore

Envirolab Services Pty Ltd
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25 Research Drive Croydon South VIC 3136
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melbourne@envirolab.com.au
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Certificate of Analysis MFJ0468

Client Details

Client	JK Environments
Contact	Katrina Taylor
Address	115 Wicks Road, Macquarie Park, NSW, 2113

Sample Details

Your Reference	E37084PT
Number of Samples	2 Soil
Date Samples Received	22/10/2024
Date Instructions Received	22/10/2024

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 soils and on an as received basis for other matrices.

Report Details

Date Results Requested by	28/10/2024
Date of Issue	28/10/2024

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

Authorisation Details

Results Approved By	Tara White, Metals Supervisor Tianna Milburn, Senior Chemist
Laboratory Manager	Pamela Adams

Samples in this Report

Envirolab ID	Sample ID	Matrix	Date Sampled	Date Received
MFJ0468-01	SDUP2	Soil	14/10/2024	22/10/2024
MFJ0468-02	SDUP4	Soil	15/10/2024	22/10/2024

Volatile TRH and BTEX (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
TRH C6-C9	mg/kg	25	<25	<25
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 less BTEX (F1)	mg/kg	25	<25	<25
Methyl tert butyl ether (MTBE)	mg/kg	0.50	<0.50	<0.50
Benzene	mg/kg	0.20	<0.20	<0.20
Toluene	mg/kg	0.50	<0.50	<0.50
Ethylbenzene	mg/kg	1.0	<1.0	<1.0
meta+para Xylene	mg/kg	2.0	<2.0	<2.0
ortho-Xylene	mg/kg	1.0	<1.0	<1.0
Total Xylene	mg/kg	3.0	<3.0	<3.0
Naphthalene (value used in F2 calc)	mg/kg	1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%		*90.1*	*96.5*

Semi-volatile TRH (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
TRH C10-C14	mg/kg	50	<50	<50
TRH C15-C28	mg/kg	100	<100	<100
TRH C29-C36	mg/kg	100	<100	<100
Total +ve TRH C10-C36	mg/kg	50	<50	<50
TRH >C10-C16	mg/kg	50	<50	<50
TRH >C10-C16 less Naphthalene F2	mg/kg	50	<50	<50
TRH >C16-C34 (F3)	mg/kg	100	<100	<100
TRH >C34-C40 (F4)	mg/kg	100	<100	<100
Total +ve TRH >C10-C40	mg/kg	50	<50	<50
Surrogate o-Terphenyl	%		*88.4*	*89.9*

Polycyclic Aromatic Hydrocarbons (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
Naphthalene	mg/kg	0.10	<0.10	<0.10
Acenaphthylene	mg/kg	0.10	<0.10	<0.10
Acenaphthene	mg/kg	0.10	<0.10	<0.10
Fluorene	mg/kg	0.10	<0.10	<0.10
Phenanthrene	mg/kg	0.10	<0.10	<0.10
Anthracene	mg/kg	0.10	<0.10	<0.10
Fluoranthene	mg/kg	0.10	<0.10	<0.10
Pyrene	mg/kg	0.10	<0.10	<0.10
Benzo(a)anthracene	mg/kg	0.10	<0.10	<0.10
Chrysene	mg/kg	0.10	<0.10	<0.10
Benzo(b,j,k)fluoranthene	mg/kg	0.20	<0.20	<0.20
Benzo(a)pyrene	mg/kg	0.050	<0.050	<0.050
Indeno(1,2,3-c,d)pyrene	mg/kg	0.10	<0.10	<0.10
Dibenzo(a,h)anthracene	mg/kg	0.10	<0.10	<0.10
Benzo(g,h,i)perylene	mg/kg	0.10	<0.10	<0.10
Total +ve PAH	mg/kg	0.050	<0.050	<0.050
Benzo(a)pyrene TEQ calc zero	mg/kg	0.50	<0.50	<0.50
Benzo(a)pyrene TEQ calc Half	mg/kg	0.50	<0.50	<0.50
Benzo(a)pyrene TEQ calc PQL	mg/kg	0.50	<0.50	<0.50
Surrogate p-Terphenyl-D14	%		*124*	*124*

Organochlorine Pesticides (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
alpha-BHC	mg/kg	0.10	<0.10	<0.10
Hexachlorobenzene	mg/kg	0.10	<0.10	<0.10
beta-BHC	mg/kg	0.10	<0.10	<0.10
gamma-BHC	mg/kg	0.10	<0.10	<0.10
delta-BHC	mg/kg	0.10	<0.10	<0.10
Heptachlor	mg/kg	0.10	<0.10	<0.10
Aldrin	mg/kg	0.10	<0.10	<0.10
Heptachlor epoxide	mg/kg	0.10	<0.10	<0.10
trans-Chlordane	mg/kg	0.10	<0.10	<0.10
cis-Chlordane	mg/kg	0.10	<0.10	<0.10
Endosulfan I	mg/kg	0.10	<0.10	<0.10
4,4'-DDE	mg/kg	0.10	<0.10	<0.10
Dieldrin	mg/kg	0.10	<0.10	<0.10
Endrin	mg/kg	0.10	<0.10	<0.10
4,4'-DDD	mg/kg	0.10	<0.10	<0.10
Endosulfan II	mg/kg	0.10	<0.10	<0.10
Endrin aldehyde	mg/kg	0.10	<0.10	<0.10
4,4'-DDT	mg/kg	0.10	<0.10	<0.10
Endosulfan sulfate	mg/kg	0.10	<0.10	<0.10
Endrin ketone	mg/kg	0.10	<0.10	<0.10
Methoxychlor	mg/kg	0.10	<0.10	<0.10
Mirex	mg/kg	0.10	<0.10	<0.10
Total +ve DDT+DDD+DDE	mg/kg	0.10	<0.10	<0.10
Total +ve Aldrin + Dieldrin	mg/kg	0.10	<0.10	<0.10
Total +ve OCP	mg/kg	0.10	<0.10	<0.10
Surrogate 4-chloro-3-nitrobenzotrifluoride	%		*102*	*102*

Organophosphorus Pesticides (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
Dichlorvos	mg/kg	0.10	<0.10	<0.10
Dimethoate	mg/kg	0.10	<0.10	<0.10
Diazinon	mg/kg	0.10	<0.10	<0.10
Chlorpyrifos-methyl	mg/kg	0.10	<0.10	<0.10
Ronnel	mg/kg	0.10	<0.10	<0.10
Fenitrothion	mg/kg	0.10	<0.10	<0.10
Malathion	mg/kg	0.10	<0.10	<0.10
Chlorpyrifos	mg/kg	0.10	<0.10	<0.10
Parathion	mg/kg	0.10	<0.10	<0.10
Bromophos-ethyl	mg/kg	0.10	<0.10	<0.10
Ethion	mg/kg	0.10	<0.10	<0.10
Coumaphos	mg/kg	0.10	<0.10	<0.10
Disulfoton	mg/kg	0.10	<0.10	<0.10
Fenamiphos	mg/kg	0.10	<0.10	<0.10
Fenthion	mg/kg	0.10	<0.10	<0.10
Methidathion	mg/kg	0.10	<0.10	<0.10
Mevinphos	mg/kg	0.10	<0.10	<0.10
Parathion-methyl	mg/kg	0.10	<0.10	<0.10
Phorate	mg/kg	0.10	<0.10	<0.10
Phosalone	mg/kg	0.10	<0.10	<0.10
Azinphos-methyl	mg/kg	0.10	<0.10	<0.10
Surrogate 4-chloro-3-nitrobenzotrifluoride	%		*102*	*102*

Polychlorinated Biphenyls (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
Aroclor 1016	mg/kg	0.10	<0.10	<0.10
Aroclor 1221	mg/kg	0.10	<0.10	<0.10
Aroclor 1232	mg/kg	0.10	<0.10	<0.10
Aroclor 1242	mg/kg	0.10	<0.10	<0.10
Aroclor 1248	mg/kg	0.10	<0.10	<0.10
Aroclor 1254	mg/kg	0.10	<0.10	<0.10
Aroclor 1260	mg/kg	0.10	<0.10	<0.10
Total +ve PCB (1016-1260)	mg/kg	0.10	<0.10	<0.10
Surrogate 2-Fluorobiphenyl	%		*93.6*	*92.3*

Acid Extractable Metals (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
Arsenic	mg/kg	4.0	<4.0	<4.0
Cadmium	mg/kg	0.40	<0.40	<0.40
Chromium	mg/kg	1.0	23	24
Copper	mg/kg	1.0	7.7	6.9
Mercury	mg/kg	0.10	<0.10	<0.10
Nickel	mg/kg	1.0	9.2	6.1
Lead	mg/kg	1.0	9.4	12
Zinc	mg/kg	1.0	18	10

Inorganics - Moisture (Soil)

Envirolab ID	Units	PQL	MFJ0468-01	MFJ0468-02
Your Reference			SDUP2	SDUP4
Date Sampled			14/10/2024	15/10/2024
Moisture	%	0.10	11	9.7

Method Summary

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-OES.
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. 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-021/022/025_PCB	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS.
ORG-022	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and soils using DCM/Acetone/Methanol.
ORG-022_OC	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and soils using DCM/Acetone/Methanol.
ORG-022_PAH	Determination of semi-volatile organic compounds (SVOCs) by GC-MS. Water samples are extracted by LLE and solids using DCM/Acetone/Methanol. For PAHs:- Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, for Total +ve calculations, the PQL is reflective of the lowest individual PQL and therefore, for example, "Total +ve PAHs" is simply a sum of the positive individual PAHs.
ORG-023_F1_TOT	Determination of volatile organic compounds (VOCs) by P&T-GC-MS. Water samples are analysed directly by purge and trap GC-MS. Solids are extracted with Methanol, diluted and analysed 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 therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Result Definitions

Identifier	Description
NR	Not reported
NEPM	National Environment Protection Measure
NS	Not specified
LCS	Laboratory Control Sample
RPD	Relative Percent Difference
>	Greater than
<	Less than
PQL	Practical Quantitation Limit
INS	Insufficient sample for this test
NA	Test not required
NT	Not tested
DOL	Samples rejected due to particulate overload (air filters only)
RFD	Samples rejected due to filter damage (air filters only)
RUD	Samples rejected due to uneven deposition (air filters only)
##	Indicates a laboratory acceptance criteria outlier, for further details, see Result Comments and/or QC Comments

Quality Control Definitions

Blank

This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, and is determined by processing solvents and reagents in exactly the same manner as for samples.

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.

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.

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.

Duplicate

This is the complete duplicate analysis of a sample from the process batch. The sample selected should be one where the analyte concentration is easily measurable.

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.

General Acceptance Criteria (GAC) - Analyte specific criteria applies for some analytes and is reflected in QC recovery tables.

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 QAQC tables for details (available on request); <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; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

Miscellaneous Information

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. We have taken the sampling date as being the date received at the laboratory.

Two significant figures are reported for the majority of tests and with a high degree of confidence, for results <10*PQL, the second significant figure may be in doubt i.e. has a relatively high degree of uncertainty and is provided for information only.

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 or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS where sediment/solids are included by default.

Urine Analysis - The BEI values listed are taken from the 2022 edition of *TLVs and BEIs Threshold Limits by ACGIH*.

Air volume measurements are not covered by Envirolab's NATA accreditation.

Data Quality Assessment Summary MFJ0468

Client Details

Client	JK Environments
Your Reference	E37084PT
Date Issued	28/10/2024

Recommended Holding Time Compliance

No recommended holding time exceedances

Quality Control and QC Frequency

QC Type	Compliant	Details
Blank	Yes	No Outliers
LCS	Yes	No Outliers
Duplicates	No	Duplicate Outliers Exist - See detailed list below
Matrix Spike	Yes	No Outliers
Surrogates / Extracted Internal Standards	Yes	No Outliers
QC Frequency	Yes	No Outliers

Surrogates/Extracted Internal Standards, Duplicates and/or Matrix Spikes are not always relevant/applicable to certain analyses and matrices. Therefore, said QC measures are deemed compliant in these situations by default. See Laboratory Acceptance Criteria for more information

Data Quality Assessment Summary MFJ0468

Recommended Holding Time Compliance

Analysis	Sample Number(s)	Date Sampled	Date Extracted	Date Analysed	Compliant
vTRH&MBTEXN | Soil	1	14/10/2024	22/10/2024	24/10/2024	Yes
	2	15/10/2024	22/10/2024	24/10/2024	Yes
sTRH | Soil	1	14/10/2024	22/10/2024	25/10/2024	Yes
	2	15/10/2024	22/10/2024	25/10/2024	Yes
PAH | Soil	1	14/10/2024	22/10/2024	25/10/2024	Yes
	2	15/10/2024	22/10/2024	25/10/2024	Yes
OCP | Soil	1	14/10/2024	22/10/2024	25/10/2024	Yes
	2	15/10/2024	22/10/2024	25/10/2024	Yes
OPP (21 list) | Soil	1	14/10/2024	22/10/2024	25/10/2024	Yes
	2	15/10/2024	22/10/2024	25/10/2024	Yes
PCB | Soil	1	14/10/2024	22/10/2024	25/10/2024	Yes
	2	15/10/2024	22/10/2024	25/10/2024	Yes
Metals | Soil	1	14/10/2024	22/10/2024	24/10/2024	Yes
	2	15/10/2024	22/10/2024	24/10/2024	Yes
Metals-Hg | Soil	1	14/10/2024	22/10/2024	24/10/2024	Yes
	2	15/10/2024	22/10/2024	24/10/2024	Yes
Moisture | Soil	1	14/10/2024	22/10/2024	24/10/2024	Yes
	2	15/10/2024	22/10/2024	24/10/2024	Yes

Outliers: Duplicates

ORG-020|Semi-volatile TRH (Soil)| Batch BFJ4282

Sample ID	Duplicate ID	Analyte	% Limits	RPD
BFJ4282-DUP3#	DUP3	TRH >C16-C34 (F3)	50.00	53.6[1]

Quality Control MFJ0468

ORG-023_F1_TOT|Volatile TRH and BTEX (Soil) | Batch BFJ4281

Analyte	Units	PQL	Blank	DUP1 BFJ4281-DUP1# Samp | QC | RPD %	LCS %	Spike % MFJ0468-01
TRH C6-C9	mg/kg	25	<25	<25 | <25 | [NA]	97.3	106
TRH C6-C10	mg/kg	25	<25	<25 | <25 | [NA]	93.8	103
TRH C6-C10 less BTEX (F1)	mg/kg	25	<25	<25 | <25 | [NA]	[NA]	[NA]
Methyl tert butyl ether (MTBE)	mg/kg	0.50	<0.50	<0.50 | <0.50 | [NA]	[NA]	[NA]
Benzene	mg/kg	0.20	<0.20	<0.20 | <0.20 | [NA]	87.8	98.8
Toluene	mg/kg	0.50	<0.50	<0.50 | <0.50 | [NA]	91.8	103
Ethylbenzene	mg/kg	1.0	<1.0	<1.0 | <1.0 | [NA]	82.5	95.5
meta+para Xylene	mg/kg	2.0	<2.0	<2.0 | <2.0 | [NA]	75.9	88.1
ortho-Xylene	mg/kg	1.0	<1.0	<1.0 | <1.0 | [NA]	81.4	93.2
Total Xylene	mg/kg	3.0	<3.0	<3.0 | <3.0 | [NA]	[NA]	[NA]
Naphthalene (value used in F2 calc)	mg/kg	1.0	<1.0	<1.0 | <1.0 | [NA]	[NA]	[NA]
Surrogate aaa-Trifluorotoluene	*%*		*97.6*	*87.2 | 85.4*	*91.7*	*94.1*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

ORG-020|Semi-volatile TRH (Soil) | Batch BFJ4282

Analyte	Units	PQL	Blank	DUP1 BFJ4282-DUP1# Samp | QC | RPD %	DUP2 BFJ4282-DUP2# Samp | QC | RPD %	LCS %	Spike % BFJ4282-MS1#
TRH C10-C14	mg/kg	50	<50	<50 | <50 | [NA]		124	124
TRH C15-C28	mg/kg	100	<100	227 | 139 | [NA]		100	85.9
TRH C29-C36	mg/kg	100	<100	424 | 322 | [NA]		98.8	88.0
TRH >C10-C16	mg/kg	50	<50	<50 | <50 | [NA]		97.8	95.8
TRH >C16-C34 (F3)	mg/kg	100	<100	569 | 389 | [NA]		102	86.2
TRH >C34-C40 (F4)	mg/kg	100	<100	238 | 218 | [NA]		94.1	79.1
Surrogate o-Terphenyl	*%*		*90.7*	*88.6 | 76.1*		*109*	*88.2*

Analyte	Units	PQL	Blank	DUP3 BFJ4282-DUP3# Samp | QC | RPD %	DUP4 BFJ4282-DUP4# Samp | QC | RPD %	LCS %
TRH C10-C14	mg/kg	50		<50 | <50 | [NA]		[NA]
TRH C15-C28	mg/kg	100		388 | 199 | [NA]		[NA]
TRH C29-C36	mg/kg	100		397 | 266 | [NA]		[NA]
TRH >C10-C16	mg/kg	50		<50 | <50 | [NA]		[NA]
TRH >C16-C34 (F3)	mg/kg	100		672 | 388 | 53.6 [1]		[NA]
TRH >C34-C40 (F4)	mg/kg	100		316 | 211 | [NA]		[NA]
Surrogate o-Terphenyl	*%*			*111 | 86.8*		*[NA]*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MFJ0468

ORG-022_PAH | Polycyclic Aromatic Hydrocarbons (Soil) | Batch BFJ4282

Analyte	Units	PQL	Blank	DUP1 BFJ4282-DUP1# Samp | QC | RPD %	DUP2 BFJ4282-DUP2# Samp | QC | RPD %	LCS %	Spike % BFJ4282-MS2#
Naphthalene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		89.3	97.0
Acenaphthylene	mg/kg	0.10	<0.10	0.106 | 0.120 | [NA]		[NA]	[NA]
Acenaphthene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		91.7	101
Fluorene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		86.1	96.7
Phenanthrene	mg/kg	0.10	<0.10	0.166 | 0.197 | [NA]		93.9	106
Anthracene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Fluoranthene	mg/kg	0.10	<0.10	0.580 | 0.657 | 12.4		99.6	103
Pyrene	mg/kg	0.10	<0.10	0.651 | 0.766 | 16.1		103	107
Benzo(a)anthracene	mg/kg	0.10	<0.10	0.314 | 0.332 | [NA]		[NA]	[NA]
Chrysene	mg/kg	0.10	<0.10	0.375 | 0.430 | [NA]		96.6	101
Benzo(b,j,k)fluoranthene	mg/kg	0.20	<0.20	0.801 | 0.871 | [NA]		[NA]	[NA]
Benzo(a)pyrene	mg/kg	0.050	<0.050	0.520 | 0.571 | 9.21		103	99.6
Indeno(1,2,3-c,d)pyrene	mg/kg	0.10	<0.10	0.304 | 0.334 | [NA]		[NA]	[NA]
Dibenzo(a,h)anthracene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Benzo(g,h,i)perylene	mg/kg	0.10	<0.10	0.397 | 0.421 | [NA]		[NA]	[NA]
Surrogate p-Terphenyl-D14	*%*		*124*	*117 | 118*		*121*	*118*

Analyte	Units	PQL	Blank	DUP3 BFJ4282-DUP3# Samp | QC | RPD %	DUP4 BFJ4282-DUP4# Samp | QC | RPD %	LCS %
Naphthalene	mg/kg	0.1		0.136 | 0.195 | [NA]		[NA]
Acenaphthylene	mg/kg	0.1		0.107 | 0.144 | [NA]		[NA]
Acenaphthene	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Fluorene	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Phenanthrene	mg/kg	0.1		0.534 | 0.414 | [NA]		[NA]
Anthracene	mg/kg	0.1		0.171 | 0.161 | [NA]		[NA]
Fluoranthene	mg/kg	0.1		1.06 | 0.890 | 17.1		[NA]
Pyrene	mg/kg	0.1		1.10 | 0.966 | 12.8		[NA]
Benzo(a)anthracene	mg/kg	0.1		0.518 | 0.488 | 5.99		[NA]
Chrysene	mg/kg	0.1		0.625 | 0.529 | 16.7		[NA]
Benzo(b,j,k)fluoranthene	mg/kg	0.2		1.11 | 1.06 | 4.46		[NA]
Benzo(a)pyrene	mg/kg	0.05		0.665 | 0.699 | 4.97		[NA]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1		0.362 | 0.362 | [NA]		[NA]
Dibenzo(a,h)anthracene	mg/kg	0.1		0.105 | 0.102 | [NA]		[NA]
Benzo(g,h,i)perylene	mg/kg	0.1		0.438 | 0.441 | [NA]		[NA]
Surrogate p-Terphenyl-D14	*%*			*107 | 110*		*[NA]*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MFJ0468

ORG-022_OC|Organochlorine Pesticides (Soil) | Batch BFJ4282

Analyte	Units	PQL	Blank	DUP1 BFJ4282-DUP1# Samp | QC | RPD %	DUP2 BFJ4282-DUP2# Samp | QC | RPD %	LCS %	Spike % BFJ4282-MS2#
alpha-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		86.7	95.3
Hexachlorobenzene	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
beta-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		85.3	90.0
gamma-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
delta-BHC	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Heptachlor	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		91.7	106
Aldrin	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		96.7	101
Heptachlor epoxide	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		85.7	91.8
trans-Chlordane	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
cis-Chlordane	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Endosulfan I	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
4,4'-DDE	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		94.5	100
Dieldrin	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		85.4	95.1
Endrin	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		62.0	82.5
4,4'-DDD	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		110	118
Endosulfan II	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Endrin aldehyde	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
4,4'-DDT	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Endosulfan sulfate	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		84.1	61.0
Endrin ketone	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Methoxychlor	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Mirex	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Surrogate 4-chloro-3-nitrobenzotrifluoride	*%*		*102*	*105 | 106*		*100*	*102*

Analyte	Units	PQL	Blank	DUP3 BFJ4282-DUP3# Samp | QC | RPD %	DUP4 BFJ4282-DUP4# Samp | QC | RPD %	LCS %
alpha-BHC	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Hexachlorobenzene	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
beta-BHC	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
gamma-BHC	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
delta-BHC	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Heptachlor	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aldrin	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Heptachlor epoxide	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
trans-Chlordane	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
cis-Chlordane	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Endosulfan I	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
4,4'-DDE	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Dieldrin	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Endrin	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
4,4'-DDD	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Endosulfan II	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Endrin aldehyde	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
4,4'-DDT	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Endosulfan sulfate	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Endrin ketone	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Methoxychlor	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Mirex	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Surrogate 4-chloro-3-nitrobenzotrifluoride	*%*			*106 | 109*		*[NA]*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MFJ0468

ORG-022|Organophosphorus Pesticides (Soil) | Batch BFJ4282

Analyte	Units	PQL	Blank	DUP1 BFJ4282-DUP1# Samp | QC | RPD %	DUP2 BFJ4282-DUP2# Samp | QC | RPD %	LCS % BFJ4282-MS2#	Spike % BFJ4282-MS2#
Dichlorvos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		74.3	81.9
Dimethoate	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Diazinon	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Chlorpyrifos-methyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		78.1	84.4
Ronnel	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		79.2	84.9
Fenitrothion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		79.0	87.7
Malathion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		69.9	81.5
Chlorpyrifos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		85.2	93.1
Parathion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		81.9	92.4
Bromophos-ethyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Ethion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		81.9	89.5
Coumaphos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Disulfoton	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Fenamiphos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Fenthion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Methidathion	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Mevinphos	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Parathion-methyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Phorate	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Phosalone	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Azinphos-methyl	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Surrogate 4-chloro-3-nitrobenzotrifluoride	*%*		*102*	*105 | 106*		*100*	*102*

Analyte	Units	PQL	Blank	DUP3 BFJ4282-DUP3# Samp | QC | RPD %	DUP4 BFJ4282-DUP4# Samp | QC | RPD %	LCS % BFJ4282-MS2#
Dichlorvos	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Dimethoate	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Diazinon	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Chlorpyrifos-methyl	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Ronnel	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Fenitrothion	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Malathion	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Chlorpyrifos	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Parathion	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Bromophos-ethyl	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Ethion	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Coumaphos	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Disulfoton	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Fenamiphos	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Fenthion	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Methidathion	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Mevinphos	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Parathion-methyl	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Phorate	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Phosalone	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Azinphos-methyl	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Surrogate 4-chloro-3-nitrobenzotrifluoride	*%*			*106 | 109*		*[NA]*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

Quality Control MFJ0468

ORG-021/022/025_PCB | Polychlorinated Biphenyls (Soil) | Batch BFJ4282

Analyte	Units	PQL	Blank	DUP1 BFJ4282-DUP1# Samp | QC | RPD %	DUP2 BFJ4282-DUP2# Samp | QC | RPD %	LCS %	Spike % BFJ4282-MS2#
Aroclor 1016	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1221	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1232	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1242	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1248	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1254	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
Aroclor 1260	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		[NA]	[NA]
PCB C103	mg/kg			0.00 | 0.00 | [NA]		81.2	88.0
Surrogate 2-Fluorobiphenyl	*%*		*97.9*	*99.5 | 97.8*		*99.4*	*99.7*

Analyte	Units	PQL	Blank	DUP3 BFJ4282-DUP3# Samp | QC | RPD %	DUP4 BFJ4282-DUP4# Samp | QC | RPD %	LCS %
Aroclor 1016	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aroclor 1221	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aroclor 1232	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aroclor 1242	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aroclor 1248	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aroclor 1254	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
Aroclor 1260	mg/kg	0.1		<0.10 | <0.10 | [NA]		[NA]
PCB C103	mg/kg			0.00 | 0.00 | [NA]		[NA]
Surrogate 2-Fluorobiphenyl	*%*			*95.5 | 95.7*		*[NA]*

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

METALS-020 | Acid Extractable Metals (Soil) | Batch BFJ4280

Analyte	Units	PQL	Blank	DUP1 BFJ4280-DUP1# Samp | QC | RPD %	DUP2 BFJ4280-DUP2# Samp | QC | RPD %	LCS %	Spike % BFJ4280-MS1#
Arsenic	mg/kg	4.0	<4.0	4.39 | 5.54 | [NA]		99.7	99.4
Cadmium	mg/kg	0.40	<0.40	<0.40 | <0.40 | [NA]		98.5	89.0
Chromium	mg/kg	1.0	<1.0	14.7 | 21.5 | 37.5		98.6	99.2
Copper	mg/kg	1.0	<1.0	29.1 | 43.6 | 39.8		97.5	111
Lead	mg/kg	1.0	<1.0	75.2 | 103 | 30.8		97.2	95.5
Mercury	mg/kg	0.10	<0.10	<0.10 | <0.10 | [NA]		96.8	95.3
Nickel	mg/kg	1.0	<1.0	8.60 | 12.2 | 34.7		98.4	92.2
Zinc	mg/kg	1.0	<1.0	121 | 167 | 31.8		96.9	108

Analyte	Units	PQL	Blank	DUP3 BFJ4280-DUP3# Samp | QC | RPD %	DUP4 BFJ4280-DUP4# Samp | QC | RPD %	LCS %
Arsenic	mg/kg	4		9.71 | 12.4 | [NA]		[NA]
Cadmium	mg/kg	0.4		<0.40 | <0.40 | [NA]		[NA]
Chromium	mg/kg	1		36.9 | 35.9 | 2.87		[NA]
Copper	mg/kg	1		106 | 105 | 1.36		[NA]
Lead	mg/kg	1		96.5 | 121 | 22.6		[NA]
Mercury	mg/kg	0.1		0.338 | 0.351 | [NA]		[NA]
Nickel	mg/kg	1		47.9 | 53.5 | 11.0		[NA]
Zinc	mg/kg	1		391 | 526 | 29.4		[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

INORG-008 | Inorganics - Moisture (Soil) | Batch BFJ4272

Analyte	Units	PQL	Blank	DUP1 BFJ4272-DUP1# Samp | QC | RPD %	DUP2 MFJ0468-01 Samp | QC | RPD %	LCS %
Moisture	%	0.1		10.6 | 10.9 | 2.80	10.9 | 9.63 | 12.6	[NA]

The QC reported was not specifically part of this workorder but formed part of the QC process batch.

QC Comments

Identifier	Description
[1]	Duplicate %RPD may be flagged as an outlier to routine laboratory acceptance, however, where one or both results are <10*PQL, the RPD acceptance criteria increases exponentially.

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Sample Receipt Advice MFJ0468

Client Details

Client	JK Environments
Attention	Katrina Taylor

Sample Login Details

Your Reference	E37084PT
Envirolab Reference	MFJ0468
Date Sample Received	22/10/2024
Date Instructions Received	22/10/2024
Date Final Results Expected	28/10/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
Number of Samples	2 Soil
Turnaround Time	4 Days
Temperatures / Cooling Methods	18.8°C Ice Pack

Additional Info

Sample storage - waters are routinely disposed at approximately 1 month and soils approximately 2 months from receipt.

Requests for longer term sample storage must be received in writing.

Where no sampling date has been supplied for some or all samples, the date of sample receipt has been used as the associated sampling date. The sampling dates are used to assess compliance to recommended Technical Holding Times.

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).

Please direct any queries to:

Pamela Adams

Phone	03 9763 2500
Email	padams@envirolab.com.au

Chris De Luca

Phone	03 9763 2500
Email	cdeluca@envirolab.com.au

Analysis underway, details on the following page

Sample Receipt Advice MFJ0468

Analysis Grid

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

	Combination 6	Moisture
MFJ0468-01 Soil | 14/10/2024 SDUP2	•	•
MFJ0468-02 Soil | 15/10/2024 SDUP4	•	•

Suite Details

Suite Name	Suite Analyses
Combination 6 |Soil	vTRH&MBTEXN, sTRH, PAH, OCP, OPP (21 list), PCB, As, Cd, Cr, Cu, Hg, Ni, Pb, Zn

SAMPLE AND CHAIN OF CUSTODY FORM

TO:		FROM:
ENVIROLAB SERVICES PTY LTD 12 ASHLEY STREET CHATSWOOD NSW 2067 P: (02) 99106200 F: (02) 99106201 Attention: Aileen	JKE Job Number: E37084PT Date Results Required: STANDARD Page: 4 of 4	JKEnvironments REAR OF 115 WICKS ROAD MACQUARIE PARK, NSW 2113 P: 02-9888 5000 F: 02-9888 5001 Attention: Katrina Taylor

Location:	Bungendore, NSW	Sample Preserved in Esky on Ice
Sampler:	LR	Tests Required

	Date Sampled	Lab Ref:	Sample Number	Depth (m)	Sample Container	PID	Sample Description	Combo 6aNEPM	Combo 6	Combo 6a	Combo 3	Asbestos (detection)	BTEX							
1	14.10.2024	76	SDUP2	-	G		Silty Clay		X	Please see Chain of Custody Form										
	15.10.2024	76	SDUP3	-	G		Silty Clay		X											
2	15.10.2024	80	SDUP4	-	G		Silty Clay		X	Please see Chain of Custody Form										
	16.10.2024	77	SDUP5	-	G		Silty Clay													
	16.10.2024	78	SDUP6	-	G		F: Silty Clay													
	14.10.2024	79	TS	-	V		Trip Spike						X							
	14.10.2024	80	TB	-	V		Trip Blank				X									
	17.10.2024	81	FR1-SPT	-	#		Rinsate				X									

Envirolab Services
55 Research Drive
Croydon South VIC 3136
Ph: (03) 9763 2500

ENVIROLAB

Job No: MFJ0468

Date Received: 22/10/24
Time Received: 13:30
Received By: ZS
Temp: Cool/Ambient 18.8
Cooling: Ice/Icepack
Security: Intact/Broken/None

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

Relinquished By: LR	Date:	Time:	Received By:	Date:
			KWu	18/10/24

Relinquished by: Christine Ho
ELS SYD
1030 21/10/24

364339
18/10/24
KWu

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

CERTIFICATE OF ANALYSIS 364339-B

Client Details

Client	JK Environments
Attention	Katrina Taylor
Address	PO Box 976, North Ryde BC, NSW, 1670

Sample Details

Your Reference	**E37084PT, Bungendore**
Number of Samples	Additional analysis 1 sample
Date samples received	18/10/2024
Date completed instructions received	08/11/2024

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	11/11/2024
Date of Issue	11/11/2024

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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
Larry Ye, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		364339-B-80
Your Reference	UNITS	TB
Depth		-
Date Sampled		14.10.2024
Type of sample		Soil
Date extracted	-	08/11/2024
Date analysed	-	09/11/2024
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTRH 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	%	113

svTRH (C10-C40) in Soil		
Our Reference		364339-B-80
Your Reference	UNITS	TB
Depth		-
Date Sampled		14.10.2024
Type of sample		Soil
Date extracted	-	11/11/2024
Date analysed	-	11/11/2024
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	%	96

PAHs in Soil		
Our Reference		364339-B-80
Your Reference	UNITS	TB
Depth		-
Date Sampled		14.10.2024
Type of sample		Soil
Date extracted	-	11/11/2024
Date analysed	-	11/11/2024
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	%	105

Acid Extractable metals in soil		
Our Reference		364339-B-80
Your Reference	UNITS	TB
Depth		-
Date Sampled		14.10.2024
Type of sample		Soil
Date prepared	-	11/11/2024
Date analysed	-	11/11/2024
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	<1
Copper	mg/kg	<1
Lead	mg/kg	<1
Mercury	mg/kg	<0.1
Nickel	mg/kg	<1
Zinc	mg/kg	<1

Method ID	Methodology Summary
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-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-20	[NT]
Date extracted	-			08/11/2024	[NT]	[NT]	[NT]	[NT]	08/11/2024	[NT]
Date analysed	-			09/11/2024	[NT]	[NT]	[NT]	[NT]	09/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	127	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	127	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	130	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	122	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	130	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	126	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	116	[NT]	[NT]	[NT]	[NT]	117	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			11/11/2024	[NT]	[NT]	[NT]	[NT]	11/11/2024	[NT]
Date analysed	-			11/11/2024	[NT]	[NT]	[NT]	[NT]	11/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	138	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	129	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	138	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	104	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	129	[NT]
Surrogate o-Terphenyl	%		Org-020	92	[NT]	[NT]	[NT]	[NT]	95	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			11/11/2024	[NT]	[NT]	[NT]	[NT]	11/11/2024	[NT]
Date analysed	-			11/11/2024	[NT]	[NT]	[NT]	[NT]	11/11/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	84	[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]	86	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[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]	84	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[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]	85	[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]	80	[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	108	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			11/11/2024	[NT]	[NT]	[NT]	[NT]	11/11/2024	[NT]
Date analysed	-			11/11/2024	[NT]	[NT]	[NT]	[NT]	11/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	94	[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	JK Environments
Attention	Katrina Taylor

Sample Login Details

Your reference	E37084PT, Bungendore
Envirolab Reference	364339-B
Date Sample Received	18/10/2024
Date Instructions Received	08/11/2024
Date Results Expected to be Reported	11/11/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	Additional analysis 1 sample
Turnaround Time Requested	1 day
Temperature on Receipt (°C)	15
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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

Analysis Underway, details on the following page:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	On Hold
BH1 -0-0.2					✓
BH1-0.8-0.95					✓
BH1-1.8-1.95					✓
BH2-0-0.2					✓
BH2-0.8-0.95					✓
BH3-0-0.2					✓
BH3-0.8-0.95					✓
BH4-0-0.2					✓
BH4-0.8-0.95					✓
BH5-0-0.2					✓
BH5-0.8-0.95					✓
BH6-0-0.2					✓
BH6-0.8-0.95					✓
BH7-0-0.2					✓
BH7-0.8-0.95					✓
BH8-0-0.2					✓
BH8-0.8-0.95					✓
BH9-0-0.2					✓
BH9-0.8-0.95					✓
BH10-0-0.2					✓
BH10-0.8-0.95					✓
BH10-1.7-1.8					✓
BH11-0-0.4					✓
BH11-0.7-0.95					✓
BH12-0-0.2					✓
BH12 -0.8-0.					✓
BH13-0-0.2					✓
BH13-0.8-0.95					✓
BH14-0-0.2					✓
BH14-0.8-0.95					✓
BH15-0-0.2					✓
BH15-0.8-0.95					✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	On Hold
BH16-0-0.2					✓
BH16-0.8-0.95					✓
BH16-1.8-1.95					✓
BH17-0-0.2					✓
BH17-0.8-0.95					✓
BH18-0-0.2					✓
BH18-0.8-0.95					✓
BH19-0-0.2					✓
BH19-0.8-0.95					✓
BH20-0-0.2					✓
BH20-0.8-0.95					✓
BH21-0-0.2					✓
BH21-0.8-0.95					✓
BH22-0-0.2					✓
BH22-0.8-0.95					✓
BH23-0-0.2					✓
BH23-0.8-0.9					✓
BH24-0-0.2					✓
BH24 -0.8-0.					✓
BH25-0-0.2					✓
BH25-0.8-0.95					✓
BH26-0-0.2					✓
BH26-0.8-0.95					✓
BH27-0-0.2					✓
BH27-0.8-0.95					✓
BH28-0-0.2					✓
BH28-0.8-0.9					✓
BH29-0-0.2					✓
BH29-0.8-0.95					✓
BH30-0-0.2					✓
BH30-0.8-0.95					✓
BH31-0-0.2					✓

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil	On Hold
BH31-0.8-0.95					✓
BH31-1.8-1.95					✓
BH32-0-0.2					✓
BH32-0.8-0.95					✓
BH33-0-0.2					✓
BH33-0.8-0.95					✓
BH34-0-0.2					✓
BH34-0.8-0.95					✓
BH35-0-0.2					✓
BH35-0.8-0.95					✓
SDUP1					✓
SDUP3					✓
SDUP5					✓
SDUP6					✓
TS					✓
TB	✓	✓	✓	✓	
FR1-SPT					✓

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.

Anna Bui

From: Simon Song
Sent: Friday, 8 November 2024 3:32 PM
To: Katrina Taylor; Nancy Zhang
Cc: Anna Bui
Subject: RE: Results for Registration 364339 E37084PT, Bungendore

Hi Katrina,
I've just sent the revised report with >7mm.

80

Anna, A job for TB combo 3, no charge

ELJ REF: 364339-B

TAT: 1 day

DUE: 11/11/24

AB.

Kind Regards,

Simon Song | Senior Customer Service | Envirolab Services

Great Science. Great Service.

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From: Katrina Taylor <KTaylor@jkenvironments.com.au>
Sent: Friday, 8 November 2024 12:15 PM
To: Nancy Zhang <NZhang@envirolab.com.au>; Simon Song <SSong@envirolab.com.au>
Subject: RE: Results for Registration 364339 E37084PT, Bungendore

Hi Simon/Nancy,

The *ACM >7mm Estimation** does not appear to have been reported, is this an error or could you let me know why not please.

Also, the TB was only analysed for BTEX not the full suite 3 as requested on the CoC. I missed this at the time of issue of the SRN. No need to report the additional analytes, however could you just check the invoice is correct if not already issued.

Thanks for your help!

Regards
Katrina Taylor
Associate | Environmental Scientist
NSW Licensed Asbestos Assessor

Appendix F: Report Explanatory Notes

QA/QC Definitions

The QA/QC terms used in this report are defined below. The definitions are in accordance with US EPA publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (1994)[17] methods and those described in *Environmental Sampling and Analysis, A Practical Guide,* (1991)[18]. The NEPM (2013) is consistent with these documents.

A. Practical Quantitation Limit (PQL), Limit of Reporting (LOR) & Estimated Quantitation Limit (EQL)

These terms all refer to the concentration above which results can be expressed with a minimum 95% confidence level. The laboratory reporting limits are generally set at ten times the standard deviation for the Method Detection Limit for each specific analyte. For the purposes of this report the LOR, PQL, and EQL are considered to be equivalent.

When assessing laboratory data it should be borne in mind that values at or near the PQL have two important limitations: *"The uncertainty of the measurement value can approach, and even equal, the reported value. Secondly, confirmation of the analytes reported is virtually impossible unless identification uses highly selective methods. These issues diminish when reliably measurable amounts of analytes are present. Accordingly, legal and regulatory actions should be limited to data at or above the reliable detection limit*" (Keith, 1991).

B. Precision

The degree to which data generated from repeated measurements differ from one another due to random errors. Precision is measured using the standard deviation or Relative Percent Difference (RPD).

C. Accuracy

Accuracy is a measure of the agreement between an experimental result and the true value of the parameter being measured (i.e. the proximity of an averaged result to the true value, where all random errors have been statistically removed). The assessment of accuracy for an analysis can be achieved through the analysis of known reference materials or assessed by the analysis of surrogates, field blanks, trip spikes and matrix spikes. Accuracy is typically reported as percent recovery.

D. Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is primarily dependent upon the design and implementation of the sampling program. Representativeness of the data is partially ensured by the avoidance of contamination, adherence to sample handing and analysis protocols and use of proper chain-of-custody and documentation procedures.

E. Completeness

Completeness is a measure of the number of valid measurements in a data set compared to the total number of measurements made and overall performance against DQIs. The following information is assessed for completeness:

- Chain-of-custody forms;
- Sample receipt form;
- All sample results reported;
- All blank data reported;

[17] US EPA, (1994). *SW-846: Test Methods for Evaluating Solid Waste, Physical/Chemical Methods.* (US EPA SW-846)

[18] Keith., H, (1991). *Environmental Sampling and Analysis, A Practical Guide*

- All laboratory duplicate and RPDs calculated;
- All surrogate spike data reported;
- All matrix spike and lab control spike (LCS) data reported and RPDs calculated;
- Spike recovery acceptable limits reported; and
- NATA stamp on reports.

F. Comparability

Comparability is the evaluation of the similarity of conditions (e.g. sample depth, sample homogeneity) under which separate sets of data are produced. Data comparability checks include a bias assessment that may arise from the following sources:

- Collection and analysis of samples by different personnel; Use of different techniques;
- Collection and analysis by the same personnel using the same methods but at different times; and
- Spatial and temporal changes (due to environmental dynamics).

G. Blanks

The purpose of laboratory and field blanks is to check for artefacts and interferences that may arise during sampling, transport and analysis.

H. Matrix Spikes

Samples are spiked with laboratory grade standards to detect interactive effects between the sample matrix and the analytes being measured. Matrix Spikes are reported as a percent recovery and are prepared for 1 in every 20 samples. Sample batches that contain less than 20 samples may be reported with a Matrix Spike from another batch. The percent recovery is calculated using the formula below. Acceptable recovery limits are 70% to 130%.

$$\frac{\text{(Spike Sample Result – Sample Result) x 100}}{\text{Concentration of Spike Added}}$$

I. Surrogate Spikes

Samples are spiked with a known concentration of compounds that are chemically related to the analyte being investigated but unlikely to be detected in the environment. The purpose of the Surrogate Spikes is to check the accuracy of the analytical technique. Surrogate Spikes are reported as percent recovery.

J. Duplicates

Laboratory duplicates measure precision, expressed as Relative Percent Difference. Duplicates are prepared from a single field sample and analysed as two separate extraction procedures in the laboratory. The RPD is calculated using the formula where D1 is the sample concentration and D2 is the duplicate sample concentration:

$$\frac{(D1 - D2) \times 100}{\{(D1 + D2)/2\}}$$

Appendix G: Data (QA/QC) Evaluation

Data (QA/QC) Evaluation

A. INTRODUCTION

This Data (QA/QC) Evaluation forms part of the validation process for the DQOs documented in Section 7.1 of this report. Checks were made to assess the data in terms of precision, accuracy, representativeness, comparability and completeness. These 'PARCC' parameters are referred to collectively as DQIs and are defined in the Report Explanatory Notes attached in the report appendices.

1. Field and Laboratory Considerations

The quality of the analytical data produced for this project has been considered in relation to the following:

- Sample collection, storage, transport and analysis;
- Laboratory PQLs;
- Field QA/QC results; and
- Laboratory QA/QC results.

2. Field QA/QC Samples and Analysis

The results for the field QA/QC samples are detailed in the laboratory summary table Q1 attached to the investigation report and are discussed in the subsequent sections of this Data (QA/QC) Evaluation report. A summary of the field QA/QC samples collected and analysed for this investigation is provided in the following table:

Sample Type	Number Analysed	Frequency (of Sample Type)
Intra-laboratory duplicate (soil)	2	Approximately 5% of primary samples
Inter-laboratory duplicate (soil)	2	As above
Trip spike - soil	1	One for the investigation to demonstrate adequacy of preservation, storage and transport methods
Trip blank - soil	1	One for the investigation to demonstrate adequacy of storage and transport methods
Rinsate (soil SPT)	1	One for the investigation to demonstrate adequacy of decontamination methods

3. Data Assessment Criteria

JKE adopted the following criteria for assessing the field and laboratory QA/QC analytical results:

Field Duplicates

Acceptable targets for precision of field duplicates in this report will be 30% or less, consistent with NEPM (2013). RPD failures will be considered qualitatively on a case-by-case basis taking into account factors such as the concentrations used to calculate the RPD (i.e. RPD exceedance where concentrations are close to the PQL are typically not as significant as those where concentrations are reported at least five or 10 times the PQL), sample type, collection methods and the specific analyte where the RPD exceedance was reported.

Trip Blanks and Field Rinsates

Acceptable targets for field blank and rinsate samples in this report will be less than the PQL for organic analytes. Metals will be considered on a case-by-case basis with regards to typical background concentrations in soils and published drinking water guidelines for waters.

Trip Spikes

Acceptable targets for trip spike samples in this report will be 70% to 130%.

Laboratory QA/QC

The suitability of the laboratory data is assessed against the laboratory QA/QC criteria which is outlined in the laboratory reports. These criteria were developed and implemented in accordance with the laboratory's NATA accreditation and align with the acceptable limits for QA/QC samples as outlined in NEPM (2013) and other relevant guidelines.

A summary of the acceptable limits adopted by the primary laboratory (Envirolab) is provided below:

RPDs

- Results that are <5 times the PQL, any RPD is acceptable; and
- Results >5 times the PQL, RPDs between 0-50% are acceptable.

Laboratory Control Samples (LCS) and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spikes

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Method Blanks

- All results less than PQL.

B. DATA EVALUATION

1. Sample Collection, Storage, Transport and Analysis

Samples were collected by trained field staff in accordance with our standard sampling procedures. Field sampling procedures were designed to be consistent with relevant guidelines, including NEPM (2013) and other guidelines made under the CLM Act 1997.

Appropriate sample preservation, handling and storage procedures were adopted. Laboratory analysis was undertaken within specified holding times generally in accordance with Schedule B(3) of NEPM (2013) and the laboratory NATA accredited methodologies.

Envirolab noted that the asbestos results were reported to be consistent with the recommendations in NEPM (2013), however this level of reporting is outside the scope of their NATA accreditation. In the absence of

other available analytical methods for asbestos, this was found to be acceptable for the purpose of this investigation.

As reported in laboratory report 364339-A, holding time exceedances were reported for TRH, BTEX and PAHs. Given the samples were kept on ice, in a fridge at the JKE office or in the laboratory prior to analysis, all report indicate the samples were received in good order, JKE is of the opinion that this is not significant, and it does not affect the quality of the dataset as a whole or the outcome of the investigation.

Review of the project data also indicated that:

- COC documentation was adequately maintained;
- Sample receipt advice documentation was provided for all sample batches;
- All analytical results were reported; and
- Consistent units were used to report the analysis results.

2. Laboratory PQLs

Appropriate PQLs were adopted for the analysis and all PQLs were below the SAC.

3. Field QA/QC Sample Results

Field Duplicates

The results indicated that field precision was acceptable. RPD non-conformances were reported for some analytes as discussed below:

- Elevated RPDs were reported for copper in SDUP1/BH11 (0-0.4m);
- Elevated RPDs were reported for arsenic and nickel in SDUP2/BH13 (0-0.2m); and
- Elevated RPDs were reported for arsenic, chromium, copper and nickel in SDUP4/BH2 (0-0.2m).

Values outside the acceptable limits have been attributed to sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices. As both the primary and duplicate sample results were less than the SAC, the exceedances are not considered to have had an adverse impact on the data set as a whole.

Field/Trip Blanks

During the investigation, one soil trip blank was placed in the esky during sampling and transported back to the laboratory. The results were all less than the PQLs, therefore cross contamination between samples that may have significance for data validity did not occur.

Rinsates

With the exception of TRH F1 and copper, all results were below the PQL. The detectable concentration of light fraction TRH is most likely attributed to trihalomethanes. These compounds are breakdown products from the chlorination process and are common in potable water at the concentration reported (the Australian drinking water guideline for total trihalomethanes is 250µg/L). Similarly, the low-level metals concentrations (i.e. copper) are typical in potable water which is utilised as blank material. In JKE's experience, the concentrations reported were consistent with background concentrations in potable water and were not indicative of cross-contamination.

Trip Spikes

The results ranged from 99% to 102% and indicated that field preservation methods were appropriate.

4. Laboratory QA/QC

The analytical methods implemented by the laboratory were performed in accordance with their NATA accreditation and were consistent with Schedule B(3) of NEPM (2013). The frequency of data reported for the laboratory QA/QC (i.e. duplicates, spikes, blanks, LCS) was considered to be acceptable for the purpose of this investigation.

A review of the laboratory QA/QC data identified a minor non-conformance in Envirolab report MJ0468 in regards to the duplicate percentage RPD being flagged as an outlier to routine laboratory acceptance. However, where one or both results are <10*PQL, the RPD acceptance criteria increases exponentially.

C. DATA QUALITY SUMMARY

JKE is of the opinion that the data are adequately precise, accurate, representative, comparable and complete to serve as a basis for interpretation to achieve the investigation objectives.

Non-conformances were reported for some field QA/QC samples and laboratory QA/QC analysis. These non-conformances were considered to be sporadic and minor, and were not considered to be indicative of systematic sampling or analytical errors. On this basis, these non-conformances are not considered to materially impact the report findings.

Appendix H: Guidelines and Reference Documents

Canadian Council of Ministers of the Environment, (1999). Canadian soil quality guidelines for the protection of environmental and human health: Benzo(a)Pyrene (1997)

CRC Care, (2011). Technical Report No. 10 – Health screening levels for hydrocarbons in soil and groundwater Part 1: Technical development document

Contaminated Land Management Act 1997 (NSW)

Department of Land and Water Conservation, (1997). 1:25,000 Acid Sulfate Soil Risk Map Series

Managing Land Contamination, Planning Guidelines SEPP55 – Remediation of Land (1998)

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

NSW EPA, (2015). Guidelines on the Duty to Report Contamination under Section 60 of the CLM Act 1997

NSW EPA, (2017). Guidelines for the NSW Site Auditor Scheme, 3rd Edition

NSW EPA, (2020). Consultants Reporting on Contaminated Land, Contaminated Land Guidelines

NSW EPA, (2022). *Sampling design part 1 - application*, Contaminated Land Guidelines

National Environment Protection Council (NEPC), (2013). National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended (2013)

Olszowy, H., Torr, P., and Imray, P., (1995). Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission

Protection of the Environment Operations Act 1997 (NSW)

State Environmental Planning Policy (Resilience and Hazards) 2021 (NSW)

Western Australia Department of Health, (2021). Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia