HUNTER
ENVIRONMENTAL CONSULTING

Preliminary Site Investigation

36-38 Maitland Street, Muswellbrook, NSW

Report Ref: E0032-PSI-001-Rev0

Written by: Fletcher Harris (Graduate Environmental Scientist)

Reviewed by: Jake Duck (Environmental Scientist)

Email: office@hunterenviro.com.au

Client: Rohit Mahajan

SUSTAINABLE
ISO 9001
AS/NZS 4801
ISO 14001

21 February 2023

Prepared for

Rohit Mahajan
Ph: 0430 024 720
Email: rohit_mahajan2002@yahoo.com

Prepared by

Hunter Environmental Consulting
ABN 16 661 108 014
3/62 Sandringham Avenue
PO Box 3127
Thornton NSW 2322
Ph: (02) 4067 4151
Email: office@hunterenviro.com.au
Web: hunterenviro.com.au

Project Details

Site Address:	36-38 Maitland Street, Muswellbrook, NSW	
Project Type:	Preliminary Site Investigation	
Project no	**Report type**	**Report no**
E0032	PSI	001

Report Register

Revision Number	**Reported By**	**Reviewed By**	**Date**
Rev0	FH	JD	21/2/2023

We confirm that the following report has been produced for Rohit Mahajan, based on the described methods and conditions within.

For and on behalf of Hunter Environmental Consulting,

Jake Duck
Environmental Scientist
Bachelor of Environmental Science and Management

Executive Summary

Hunter Environmental Consulting (HEC) was engaged by Rohit Mahajan to undertake a Preliminary Site Investigation (PSI) with limited at the site located at 36-38 Maitland Street, Muswellbrook, NSW (herein referred to as the Site).

The site is currently proposed to undergo redevelopment to incorporate a child care centre. The PSI is required for due diligence purposes as part of the development application.

This PSI includes the following elements:

- Review of historical aerial images of the site and surrounding area
- Compilation of a historical title summary
- Review of a Section 10.7 Planning Certificate
- Review of publicly available environmental databases and legislative instruments
- Site inspection and interview with knowledgeable site representative (if available)
- A preliminary Conceptual Site Model (CSM) with assessment of source-pathway-receptor linkages
- Recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required

Limited soil sampling was also conducted to supplement the desktop assessment for contamination purposes. Soil sampling consisted of:

- Collection of ten (10) primary samples analysed for contaminants of concern;
- Collection of one (1) duplicate sample for QA/QC purposes; and
- Collection of one (1) rinsate sample for QA/QC purposes

The detailed desktop review of available information and thorough site inspection including shallow soil investigation have enabled the development of a preliminary CSM allowing assessment of potential health and environmental issues relating to the site. Key findings were:

1. Potential contamination sources at the site are limited based on historical land use;
2. Visible signs of gross contamination were not observed during site inspection and intrusive works;
3. Contamination in shallow soils were not identified at any of the sampling locations in exceedance of the adopted SAC.

In summary, based on the desktop study and soil sampling conducted on the Site, no indication of gross contamination has been identified which would constrain development of the Site.

With reference the HEC HAZMAT report (E0032-HAZ-001-Rev0) it is recommended that a site inspection be carried out by a suitably qualified consultant to provide a:

1. Visual clearance inspection from identified ACM locations following bonded asbestos removal works (prior to demolition); and
2. Visual inspection of the ground surface of the building footprints and general site area following demolition works.

Given the site is in satisfactory condition following demolition works and no change to the CSM is apparent, HEC considers the Site suitable for the development of the proposed Childcare Centre.

Table of Contents

Annex List:

Annex A Figure
Annex B S10.7 Planning Certificate
Annex C Historical Title Documents
Annex D Lotsearch Report
Annex E Tabulated Soil Results
Annex F Photographic Log
Annex G NATA Endorsed Lab Laboratory Results

1 Introduction

1.1 Background

Hunter Environmental Consulting (HEC) was engaged by Rohit Mahajan to undertake a Preliminary Site Investigation (PSI) with limited soil sampling at 36-38 Maitland Street, Muswellbrook, NSW (herein referred to as the Site).

The site is currently proposed to undergo redevelopment to incorporate a child care centre. The Preliminary Site Investigation is required for due diligence purposes as part of the development application.

A Site Features Plan are presented as Figure 1 of **Annex A**.

1.2 Objectives

The objectives of this PSI were to investigate potential contaminant sources, pathways and receptors in relation to the site as well as inform preliminary consideration of potential risks to human health and/or the environment within the context of the most sensitive potential land use. The Site is intended to have residential land use. For the purpose of the investigation, HIL-A has been adopted as the most sensitive land use.

This report has been prepared in general accordance with provisions for a PSI as defined within the *National Environment Protection Measure* (NEPC 2013) and the *Consultants Reporting on Contaminated Sites Contaminated Land Guidelines* (NSW EPA 2020).

All information collected informed the development of the preliminary conceptual site model which provides a representation of potential contamination sources, receptors and exposure pathways between these sources and receptors.

1.3 Scope of Works

1.3.1 Preliminary Site Investigation

This PSI includes the following elements:

- Review of historical aerial images of the site and surrounding area
- Compilation of a historical title summary
- Review of a Section 10.7 Planning Certificate
- Review of publicly available environmental databases and legislative instruments
- Site inspection and interview with knowledgeable site representative (if available)
- A preliminary Conceptual Site Model (CSM) with assessment of source-pathway-receptor linkages
- Recommendations for further investigation, any management requirements and/or any ongoing management, monitoring or remedial works that may be required.

1.4 Limited Soil Investigation

Limited soil sampling was also conducted to supplement the desktop assessment for contamination purposes. Soil sampling consisted of:

- Collection of ten (10) primary samples analysed for contaminants of concern;
- Collection of one (1) duplicate sample for QA/QC purposes; and
- Collection of one (1) rinsate sample for QA/QC purposes

1.5 HAZMAT Assessment

HEC conducted a HAZMAT assessment (E0032-HAZ-001-Rev0) of the site structures proposed to be removed as part of the development works. This PSI should be read in conjunction with the HAZMAT report.

2 Site Description

2.1 Site & Lot Identification

The site is located at 36-38 Maitland Street, Muswellbrook, NSW, legally identified as Lot 7 on Deposited Plan (DP) 1098460 and as Lot 8 on DP 6758. The sites a formed from two (2) rectangular shaped blocks consisting of approximately 2821m^2.

A summary of site information is provided in **Table 2.1** below.

Table 2.1 - Site identification

Item	Description
Current Site Owner	Rohit Mahajan
Site Address	36-38 Maitland Street, Muswellbrook, NSW
Current Zoning	RU1-General Residential
Legal Description	Lot 7 (DP) 1098460 Lot 8 (DP) 6758
Local Government Authority	Muswellbrook Shire Council
Site Area	Approximately 2821m^2
Elevation	148m Above Sea Level (ASL)
Geographical Location (GDA94-MGA56)	E 301277.373 N 6427538.822

Review of Muswellbrook Shire Council Local Environmental Plan (LEP) 2009 together with the Planning Certificate under Section 10.7 Part 2 and 5 of the Environmental Planning and Assessment Act 1979 (attached as **Annex B**) provides the following information:

1. The site is not affected by heritage items.
2. The site/s and/or adjacent lots are not affected by land reserved for acquisition.
3. The site/s is not affected by environmentally sensitive land or critical habitat.
4. The site/s and/or adjacent lots are not categorised as flood prone land under an adopted flood study. Development on the land or part of the land may still be subject to flood related development controls if there is a waterway on the land; and
5. There are no prescribed matters under section 59(2) of the Contaminated Land Management Act 1997 to be disclosed.

2.2 Surrounding Land Use

The site is located predominantly within a residential area of Muswellbrook. Review of satellite imagery identified surrounding land uses as summarised in **Table 2.2** below.

Table 2.2 - Summary of surrounding land use

Direction	Land Use	Distance
North	Residential	27m
East	Residential	Adjacent
South	Residential	Adjacent
West	Residential	40m

3 Background Data Review & Database Searches

3.1 Summary of Ownership & Site Use

Historical title searches completed for the site provide a summary of ownership as described in **Table 3.1** below.

Table 3.1 - Summary of site ownership

Date of Acquisition and term held	Registered Proprietor(s) & Occupations where available	Reference to Title at Acquisition and sale
23.11.1922 (1922 to 1980)	Lionel Horbory Jordan (Carpenter)	Volume 3391 Folio 179
03.10.1980 (1980 to 1987)	Janet Louise Jordan (Home Duties) (Transmission Application, not investigated)	Volume 3391 Folio 179
06.07.1987 (1987 to 1989)	Ronald Jordan Francis Ian Jordan	Volume 3391 Folio 179

05.04.1989 (1989 to 1994)	Ronald Jordan	Volume 3391 Folio 179 Now 8/6758
08.12.1994 (1994 to 2007)	Edward Lenard Botham Bronwyn Gay Botham	8/6758
22.03.2007 (2007 to 2010)	Joshua Edward Botham Katrina Lee Botham	8/6758
12.07.2010 (2010 to 2022)	Betty May Ellis	8/6758
12.09.2022 (2022 to Date)	# Rosy Mahajan # Rohit Mahajan	8/6758

Historical title documents sourced as part of this assessment are presented as **Annex C**.

3.2 Historical Photographs

Historical aerials and satellite images dating 1938-2022 provide a summary of development at the site and within the surrounding area. Historical images are presented as part of **Annex D** and a summary of review in **Table 3.2** below.

Table 3.2 - Historical aerial review

Date	Summary
1938	Low quality black and white aerial with two residential dwellings and two small storage structures present.
1958	Consistent with prior aerial.
1967	Consistent with prior aerial.
1974	Consistent with prior aerial.
1989	Consistent with prior aerial.
1993	Consistent with prior aerial.
1998	Medium quality aerial consistent with prior aerials with addition of a pool.
2008	High quality image consistent with prior aerial.
2013	Medium quality aerial with consistent with prior aerial.

2017	High quality image consistent with prior aerial.
2022	High quality image consistent with prior aerial.

3.3 Topography & Hydrology

Topography of the area is characterised by undulating low hills and rises and gently inclined side slopes. Review of Google Earth Pro (2021) indicates the site slightly slopes from 148m Above Sea Level (ASL) in the North to 165m ASL in the South. The closest surface water body identified is the Muscle Creek located approximately 150m to the north of site.

3.3.1 Lithology & Geology

Review of the NSW Office of Environment and Heritage soil landscape database– indicates that the site falls within the Hunter soil landscape.

Review of the NSW Department of Industry, Resources & Energy database; NATMAP 1: 100,000 Geological Sheet indicates that the site lies on Alluvial valley deposits and Branxton units. Typical lithology includes Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel. Conglomerate, sandstone and siltstone.

Review of the NSW Department of Primary Industries – Office of Water / Water Administration Ministerial Corporation database identified fifteen (15) registered bores within 1km of the site. Bore details are presented in **Table 3.3** below.

Table 3.3 - Groundwater bore details

Bore ID	Construction Date	Location	Depth (mbgl)	Purpose
GW026568	01/01/1967	119m East	7.60	Water Supply
GW024568	01/08/1965	119m East	6.10	Water Supply
GW028513	01/08/1965	137m Southeast	1.20	Water Supply
GW028514	01/08/1965	159m Southeast	1.20	Water Supply
GW034088	01/06/1971	226m East	7.30	Water Supply
GW022531	01/01/1965	234m Southeast	6.10	Unknown
GW061090	01/07/1985	493m Northwest	18.30	Water Supply
GW079785	22/04/1992	801m West	13.20	Monitoring
GW035339	01/08/1972	841m Southeast	9.10	Water Supply
GW079783	22/04/1992	841m Northwest	11.20	Monitoring
GW200845	06/10/2009	851m North	4.20	Monitoring
GW200843	06/10/2009	861m North	4.20	Monitoring
GW035928	01/02/1973	870m Southeast	-	Water Supply

GW200844	06/10/2009	875m North	4.20	Monitoring
GW032743	01/04/1968	935m Southeast	4.20	Water Supply

3.4 Chemical Storage & Waste Production / Disposal

The results of the SafeWork Dangerous Goods Search were not considered necessary due to the historical and current land use of the site.

3.5 Environmental Incident History / Register

Sources to inform consideration of potential environment incidents at the site were not identified as part of this investigation.

3.6 Onsite Database Searches

3.6.1 Current & Former Environment Protection Licences

A review of the licenced activities under the Protection of the Environment Operations act 1997 was completed on the 19th of January 2023.

A number of NSW EPA licensed activities have been conducted within proximity to the Site. The tables below list both former and current licensed activities and the type of licensed activity conducted.

Table 3.4 - Current licenced EPA activities

Licence Number	Organisation	Activity	Approx. Distance from Site
3142	Australian Rail Track Corporation Limited	Railway systems activities	331m North
656	Muswellbrook Coal Company Ltd	Mining for coal	526m Northeast
656	Muswellbrook Coal Company Ltd	Coal works	526m Northeast

Table 3.5 - Delicenced and former licenced EPA activities.

Licence Number	Organisation	Activity	Approx. Distance from Site
4653	Luhrmann Environment Management Pty Ltd	Other Activities / Non-Scheduled Activity - Application of Herbicides	57m Northwest

4838	Robert Orchard	Other Activities / Non-Scheduled Activity - Application of Herbicides	57m Northwest
6630	Sydney Weed & Pest Management Pty Ltd	Other Activities / Non-Scheduled Activity - Application of Herbicides	57m Northwest
11677	Upper Hunter County Council	Miscellaneous licensed discharge to waters (at any time)	57m Northwest
3957	Forestry Corporation Of New South Wales	Logging operations	573m Southeast
11345	Hunter And New England Area Health Service	Hazardous, Industrial or Group A Waste Generation or Storage	933m Northeast

3.6.2 Heritage

Review of the Heritage Data Source - Planning & Environment, indicates the site is not affected by heritage items. The closest registered heritage item is Fitzgerald/Olympic Park Gates situated 70m northeast of the Site. Registered heritage items within 300m of the Site are described in **Table 3.6** below.

Table 3.6 - Heritage item summary

Heritage Item Number	Description	Approx. Distance from Site
106128	Muswellbrook Post Office	677m North
5012118	Muswellbrook Railway Station and yard group	342m North
5045125	St Alban's Anglican Church	937m North
I124	Fitzgerald/Olympic Park Gates	70m Northeast
I104	Hennor	238m Northwest

A figure detailing locations of heritage items listed above is presented within LotSearch Report in **Annex D**.

3.6.3 Contaminated Land Records

A review of the NSW EPA Contaminated Land Record of Notices was completed on 19th of January 2023. This review identified that the site is not subject to regulation by the NSW EPA under Section 60 of the *Contaminated Land Management (CLM) Act 1997* and similarly that there are no sites within the surrounding area subject to regulation under the *CLM Act 1997*.

A review of the NSW EPA List of Contaminated Sites was completed 19th of January 2023. This review identified that the site has not been notified to the EPA as a contaminated site, however, there are ten (10) sites within the surrounding area that have been notified. The closest site being the United (Former Mobil) Service Station located 31m South of the site.

The findings of these reviews indicate that the Site is unlikely to be impacted by contamination known to the EPA, however possibility of hydrocarbon migration should be considered due to the proximity of the Site to the United Service Station to the South.

3.6.4 Naturally Occurring Asbestos

NSW Department of Industry, Resources & Energy (2016) identifies that the site does not fall in an area known to contain naturally occurring asbestos.

3.7 Acid Sulfate Soils

Review of the CSIRO Atlas of Australian Acid Sulfate Soils database determines the site to fall in a Class B- Low Probability of occurrence (6-70% chance of occurrence).

4 Data Quality Objectives

Data quality objectives (DQOs) have been developed to define the type and quality of data required to achieve the project objectives outlined in **Section 1.2**. DQOs have been selected with reference to relevant guidelines published by the NSW Environmental Protection Authority (EPA) and NEPC, which define minimum data requirements and quality control procedures.

The DQOs has been prepared in line with the DQO process outlined in NSW Environment Protection Authority EPA (2017) Guidelines for the NSW Site Auditor Scheme 3rd Edition and NEPM (2013). The proposed application of the seven-step DQO approach to this project is described in **Table 4.1**.

The DQO process is validated in part by Quality Assurance / Quality Control (QA/QC) assessment. The QA/QC assessment for this project is summarized in **Section 7** of the report.

Table 4.1 – DQOs

Step	Input
1. State the problem	The historic onsite and surrounding land use has potentially resulted in contamination of soil at the site presenting a risk to human health and/or the environment. Further assessment is required to obtain more data to provide adequate confidence whether the is suitable for its proposed redevelopment.
2. Identify the Decisions	The objective of this investigation is to determine if the historic land uses at the Site or surrounding area have resulted in contamination at levels that may impact the proposed development. The following decisions need to be addressed: • Is there a potential for soil contamination to be present at the Site which may pose risks to human health and environment?

	• Is remediation or management actions required to render the Site suitable for the proposed redevelopment?
3. Identify Inputs into the Decision	The primary inputs to make the above decisions are as follows: • Review of background information collected for the site; • Advancement of ten (10) boreholes to a maximum depth of 0.2m BGL to provide systematic/targeted coverage of the Site; • Observation of environmental variables including soil type, odours and staining; • Laboratory measurements of soil for constituents of concern identified as part of previous investigations; and • Field and laboratory quality assurance/quality control data.
4. Study Boundary	The investigation is limited to the site boundary as presented in *Figure 1*. The vertical study boundary is up to 0.1m (maximum sampling depth).
5. Develop a Decision Rule	The analytical results will be assessed against screening criteria as outlined in *sections 6.2* of this report.
6. Specific Limits on Decision Errors	To limit the potential for decision errors, a range of quality assurance processes were adopted. A quantitative assessment of the potential for false negatives / false positives and/or under or over recognizing of analytical results was undertaken using the data quality assurance information collected. Data quality was assessed in general in accordance with guidance detailed in Schedule B(3) of the NEPM (2013).
7. Optimise the Design for Obtaining Data	The DQOs have been developed based on a review of existing data, and discussions with the client. If data gathered during the assessment indicated that the objectives of the works are not being met, the sampling design (including sampling pattern, type of samples and analytes) would be adjusted accordingly using feedback (where necessary) from project stakeholders.

5 Site Inspection

HEC attended the site on the 24th of January 2023 to consolidate the desktop review described in the sections above. The site visit included a detailed visual inspection of the site surface and infrastructure. Key findings are presented below:

- At the time of investigation, the Site consisted of two residential dwellings with associated shed/garages and outdoor entertainment space. 38 Maitland Street Site featured an inground swimming pool to the rear of the dwelling. 36 Maitland Street featured small chicken coops/along the southern site boundary;
- Topographically the site was flat;
- No visual signs of gross contamination were observed during the site walkover.

6 Limited Soil Investigation

As stated in **Section 1.3**, a soil investigation was commissioned following desktop review of information.

The sampling density and analytical schedule generated as part of this intrusive investigation is only intended to supplement findings from the desktop review of information and is not intended to meet the minimum requirements of a Detailed Site Investigation (DSI) as outlined within the *NSW EPA Contaminated Land Guidelines - Consultants Reporting on Contaminated Sites (2020).*

All works were conducted in accordance with HEC's relevant Standard Operating Procedures (SOPs). Methodologies are outlined in the following sub-sections. Soil Investigation locations are presented in Figure 1 of **Annex A**.

6.1 Soil Sampling

Limited soil sampling was also conducted to supplement the desktop assessment for contamination purposes. Soil sampling consisted of:

- Collection of ten (10) primary samples analysed for contaminants of concern;
- Collection of one (1) duplicate sample for QA/QC purposes; and
- Collection of one (1) rinsate sample for QA/QC purposes.

6.1.1 Sampling & Analysis

Sample locations were selected using both systematic and judgemental sampling strategy for areas of obvious land use. Sampling locations and contaminants of potential concern (CoPC) were targeted following the desktop review of historical data pertaining to the Site's historical use.

Test location boreholes were advanced using a hand auger, to target depth and then sampled by hand with a fresh pair of nitrile gloves utilised between sample collection. Hand tools were decontaminated between each sampling location.

6.2 Assessment Criteria

Tier 1 assessment criteria relevant to the proposed land use have generally been adopted from the NEPM (NEPC, 2013). Specifically, this includes:

1. The CRC CARE (2011) health screening levels (HSLs) for petroleum hydrocarbons at 0 to <1m below ground level in silt/clay, adopted to assess potential vapour risks to human receptors;
2. The ASC NEPM (2013) health investigation levels (HILs), adopted to evaluate potential direct contact risks associated with the presence of other contaminants of potential concern (CoPCs) in soil (i.e. metals and PAH);
3. The CRC CARE (2011) assessment criteria for direct contact with petroleum hydrocarbons by future receptors;
4. The ASC NEPM (2013) ecological investigation levels (EILs) for inorganics to assess risks to ecological receptors; and

5. The ASC NEPM (2013) ecological screening levels for fine soil for hydrocarbon compounds to assess risks to ecological receptors.

All criteria adopted along with their associated values are displayed in **Table 1** to **Table 2** of **Annex E**.

6.3 Intrusive Investigation Observations

Inspection of boreholes and soil cuttings infers the presence of topsoil material across the investigation area to a maximum depth of 0.1-0.2m BGL. The topsoil material primarily consisted of a fine grained Silty Loam. No visual or olfactory evidence of gross contamination were observed within any at any of the investigation locations.

6.4 Analytical Results

A total of ten (10) samples were submitted for chemical analysis for a range of Contaminants of Concern including:

- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel & Zinc);
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Xylene and Ethylbenzene (BTEX);
- Polyaromatic Hydrocarbons (PAH);
- Organophosphorus Pesticides (OPP) and Organochlorine Pesticides (OCP); and
- Polychlorinated Biphenyls (PCBs).

The results of the analysis of the ten (10) primary soils samples indicate that all analytes were below the Limit of Reporting (LOR) and the Site Assessment Criteria (SAC) for BTEX, OC/OP Pesticides, and PCBs.

All heavy metals results were reported at natural concentrations acceptable under the adopted SAC.

All TRH results were reported below the LOR and SAC for all fractions with exception of F3 (>C16-C34), in which was detected at concentrations above the LOR but below the adopted SAC.

Two (2) samples (S1 0.05-0.1 and S9 0.05-0.1) were reported with detections for Benzo(a)Pyrene (B(a)P) in exceedance of ESLs, however no sensitive ecological receptors were identified at the site. All remaining samples were reported acceptable under ESLs for B(a)P.

One (1) sample (S9 0.05-0.1) reported a detection for Carcinogenic PAHs (B(a)P TEQs) in all bounds in exceedance of the HIL-A tier-1 trigger value. However,

- The 95% UCL for the B(a)P TEQ dataset was less than the HIL value;
- No individual B(a)P TEQ sample concentration value exceeded 250% the HIL value;
- The standard deviation of the B(a)P TEQ dataset did not exceed 50% of the HIL value.

All remaining samples reported concentrations for B(a)P TEQs acceptable under the adopted SAC.

Soil analytical results and UCL data sheets are included in **Table 1** and **Table 2** of **Annex E**.

7 Analytical Data Quality Assessment

The quality of analytical data presented within this report has been assessed with reference to the following issues:

1. Sampling technique;
2. Preservation and storage of samples upon collection and transport to the laboratory;
3. Sample holding times;
4. Analytical procedures;
5. Laboratory limit of reporting (LOR);
6. Laboratory quality assurance (QA) procedures; and
7. The occurrence of apparently unusual or anomalous results.

A review of these items was conducted to assess data in terms of completeness, representativeness, comparability, accuracy and precision. A discussion of the data quality assessment related to the items listed above is provided in the subsections that follow.

7.1 Sample Collection, Storage, Transport & Analysis

7.1.1 General

Samples were collected, stored and transported to the laboratory in accordance with HEC's SOPs which are consistent with guidelines provided in the NEPM (2013). All samples were collected in appropriate containers provided by the laboratory.

7.1.2 Holding Times

Laboratory analysis was undertaken within specified holding times in accordance with Schedule B3 of the NEPM (2013) and using NATA accepted analytical procedures.

7.1.3 Sample Transport & Storage Temperature

In accordance with Schedule B3 of the NEPM (2013), all samples were chilled during transport to the laboratory and evidence of chilling was recorded on the sample receipt documentation for the laboratory.

7.2 Field Intra-Laboratory Duplicate Assessment

Relative Percentage Differences (RPDs) were calculated between the primary sample concentration and its corresponding intra-laboratory duplicate. As stipulated by the NEPM, the RPD acceptance criteria is 30% however it is noted that higher variations can be expected for organic analysis, samples with low analyte concentrations or non-homogenous samples. As such, the primary laboratory RPD acceptance criteria were used and are as follows:

1. Results <10 times the LOR: No Limit
2. Results between 10-20 times the LOR: RPD must lie between 0-50%
3. Results >20 times the LOR: RPD must lie between 0-30%

One intra-laboratory duplicate sample was collected as part of this investigation. Given that the purpose of the sampling works was to provide preliminary indications as to the presence/absence of contamination, collection of 1 field duplicate per 20 primary samples was considered appropriate.

All RPD results were within the acceptable range. The field QA/QC is considered acceptable for the investigation. Sample and RPDs results are included in Table 3 of **Annex F**.

7.3 Laboratory Quality Assurance & Quality Control

Laboratory QA/QC procedures and results are detailed in the certified laboratory results contained in **Annex G**. The analytical methods implemented by the laboratories were reported to be consistent with the scope of their NATA accreditation and consistent with Schedule B3 of the NEPM (2013). The laboratory generally reported an adequate range and frequency of data quality information (including laboratory duplicates and control samples).

The reported laboratory data quality was considered acceptable to meet the objectives of this assessment.

7.4 Data Quality Summary

Overall, the data from this investigation is considered to be of sufficient quality to serve as a basis for interpretation as part of this assessment.

8 Preliminary Conceptual Site Model

A CSM is a representation of site related information regarding contaminant sources, exposure pathways and receptors. A CSM facilitates consideration of risks to human health and the environment associated with site contamination through assessment of source – pathway – receptor linkages. A preliminary CSM based on the understanding of site history and environmental setting is presented in the following sections.

8.1 Potential Sources & Associated Contaminants of Concern

Analytical results from the intrusive soil investigation indicated Benzo(a)Pyrene and TRH (F3 fraction) as Contaminants of Concern (CoC) within shallow soils at the site. Additionally, with reference to HEC's HAZMAT Assessment (E0032-HAZ-001-Rev0), Asbestos and Lead (lead paint) are considered to be CoPC subject to recommendations listed within the HAZMAT report.

Off-site sources of contamination that may affect the site are considered to be limited. Contamination migration from the Caltex Service station located south of the Site should be considered, however the risk is low.

8.2 Potential Receptors & Pathways

The following receptors have been identified based on current site setting and proposed future development:

1. Construction workers associated with the proposed development;
2. Current and future site users (including construction workers);
3. Future on-site intrusive maintenance workers; and
4. Terrestrial flora and fauna.

Pathways by which the contamination may affect the receptors presented above includes:

1. Direct contact (dermal contact, incidental ingestion and dust inhalation).

No sensitive ecological receptors were observed at the site.

8.3 SPR Linkage Assessment

A source-pathway-receptor (SPR) linkage is present when a pathway links a source with a receptor. These linkages are considered complete where a risk to the identified receptors may exist, now or in the future.

One (1) sample (S9 0.05-0.1) reported a detection for Carcinogenic PAHs (B(a)P TEQs) in all bounds in exceedance of the HIL-A tier-1 trigger value. However, based on the points presented in **Section 6.4** with reference to the NEPM (2013), the sample is considered to be suitable under the adopted SAC.

Furthermore, the location of this sample (S9) is proposed to be located within the landscaped/carpark area of the proposed development and not directly accessible by future sensitive receptors at the site.

Given that soil analytical results were reported below the adopted screening criteria (HIL/HSL-A) for the identified receptors via the relevant pathway (direct contact), this SPR linkage is considered incomplete. Therefore, a potential exposure risk is considered unlikely.

9 Conclusions

The detailed desktop review of available information and thorough site inspection including shallow soil investigation have enabled the development of a preliminary CSM allowing assessment of potential health and environmental issues relating to the site. Key findings were:

1. Potential contamination sources at the site are limited based on historical land use;
2. Visible signs of gross contamination were not observed during site inspection and intrusive works;
3. Contamination in shallow soils were not identified at any of the sampling locations in exceedance of the adopted SAC.

In summary, based on the desktop study and soil sampling conducted on the Site, no indication of gross contamination has been identified which would constrain development of the Site.

With reference the HEC HAZMAT report (E0032-HAZ-001-Rev0) it is recommended that a site inspection be carried out by a suitably qualified consultant to provide a:

1. Visual clearance inspection from identified ACM locations following bonded asbestos removal works (prior to demolition); and
2. Visual inspection of the ground surface of the building footprints and general site area following demolition works.

Given the site is in satisfactory condition following demolition works and no change to the CSM is apparent by way of surface contaminants, HEC considers the Site suitable for the development of the proposed Childcare Centre.

10 Report Limitations

HEC considers that the objectives of the original scope as presented in quote EQ0064 of the investigation have been achieved.

The analytical data and recommendations within the above report are subjected to the specific sampling and testing that was undertaken at the time of the current investigation. It should be noted that underlying site soil conditions can vary significantly across a site and the environment can change over time. If conditions encountered during intrusive works are different to those contained in this report HEC should be contacted immediately for site reassessment.

If you have any further questions about this report, please contact the undersigned.

For and on behalf of

Hunter Environmental Consulting

Reported by:

Fletcher Harris
Environmental Scientist
Bachelor of Environmental Science and Management

Reviewed by:

Jake Duck
Environmental Scientist
Bachelor of Environmental Science and Management

References

CSIRO. (2017). *Atlas of Australian Acid Sulfate Soils.*

Friebel, E., & Nadebaum, P. (2011). *CRC CARE Technical Report No.10. Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater. Summary.* Adelaide: CRC CARE.

Lotsearch. (2023). *Enviro Professional.* Reference: LS039747 EP.

National Environmental Protection Council (NEPC). (2013). *National Environment Protection (Assessment of Site Contamination) Measure 1999. Schedule B2: Guideline On-site Characterisation.* Canberra.

NSW EPA. (2017). *Naturally Occurring Asbestos in NSW*. Retrieved from https://trade.maps.arcgis.com/apps/PublicInformation/index.html?appid=87434b6ec7dd4aba8cb664d8e646fb06

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

NSW EPA. (2022). *Contaminated Land Guidelines: Sampling Design Part 1 - Application.*

Annex A

Note:
(1) Base layer sourced from Nearmap (2023).

Figure 1: Site Plan

LEGEND

Sampling Location

N
W
E
S

Annex B

PLANNING CERTIFICATE UNDER SECTION 10.7 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Enquiries	Planning
Contact	02 6549 3700
Receipt no.	1480102
Your reference	36 Maitland Street Muswellbrook

Date: 24 January 2023

Assessment: 39016 **Cert No: 23346**

Lotsearch Pty Ltd
25/100 Mount Street
NORTH SYDNEY NSW 2060

Owner (as recorded by Council)

Mr R & Mrs R Mahajan

Property Description: 36 Maitland Street MUSWELLBROOK 2333
LOT: 7 DP: 1098460

Land to which the certificate relates

The information contained in this certificate relates only to the lot or lots described on this certificate. Separate planning certificates can be obtained upon application for the other lots, those certificates may contain different information than is contained in this certificate.

CERTIFICATE UNDER SECTION 10.7(2) ENVIRONMENTAL PLANNING & ASSESSMENT ACT

1. NAMES OF RELEVANT PLANNING INSTRUMENTS AND DEVELOPMENT CONTROL PLANS

STATE ENVIRONMENTAL PLANNING POLICIES

The following State Environmental Planning Policies apply to land within the Muswellbrook Shire LGA:

SEPP (Biodiversity and Conservation) 2021 – This SEPP contains:

- Planning rules and controls for the clearing of native vegetation in NSW on land zoned for urban and environmental purposes that is not linked to a development application.
- The land use planning and assessment framework for koala habitat.

SEPP (Building Sustainability Index: BASIX) 2004 - This SEPP operates in conjunction with Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004 to ensure consistent approach to minimizing water and energy use in new dwellings.

SEPP (Exempt and Complying Development Codes) 2008 – The policy provides exempt and complying codes that have State-wide application, identifying types of development that are of minimal environmental impact.

SEPP No. 65 (Design Quality of Residential Apartment Development) – Aims to raise the design quality of residential flat development through the application of a series of design principles.

SEPP (Housing) 2021 - The principles of this Policy are to enable the development of diverse housing types, including affordable housing and purpose-built rental housing, reinforce the importance of designing housing for climate, hazards and to reflect the locality it is being built in, and to mitigate the loss of affordable rental housing.

SEPP (Industry and Employment) 2021 – This SEPP contains planning provisions for advertising signage in NSW.

Date: 24 January 2023

Cert No: 23346

SEPP (Planning Systems) 2021 – This SEPP:

- Identifies State or Regionally significant development, State significant infrastructure, and critical State significant infrastructure.
- Provides consideration of development delivery plans by local Aboriginal land councils in planning assessment.
- Allows the Planning Secretary to elect to be the concurrence authority for certain development that requires concurrence under nominated Staten Environmental planning policies.

SEPP (Precincts - Regional) 2021 – This SEPP contains planning provisions for precinct planning, which is a form of strategic planning applied to a specified geographic area. The precincts in this SEPP are located outside the Greater Sydney Region Plan.

SEPP (Primary Production) 2021 – This SEPP contains planning provisions:

- To manage primary production and rural development including supporting sustainable agriculture.
- For the protection of prime agricultural land of state and regional significance as well as regionally significant mining and extractive resources.

SEPP (Resilience and Hazards) 2021 – This SEPP contains planning provisions:

- To manage hazardous and offensive development.
- To provide a state-wide planning framework for the remediation of contaminated land and to minimise the risk of harm.

SEPP (Resources and Energy) 2021 – This SEPP contains planning provisions:

- For the assessment and development of mining, petroleum production and extractive material resource proposals in NSW.
- Identifying location where open cut mining and coal seam gas projects are prohibited.
- To facilitate the development of extractive resources in proximity to the population of the Sydney Metropolitan Area by identifying land which contains extractive material of regional significance.

SEPP (Sustainable Buildings) 2022 – This SEPP contains planning provisions:

- To encourage the design and delivery of sustainable buildings.
- To monitor the embodied emissions of materials used in construction of buildings.
- To minimise the consumption of energy.
- To reduce greenhouse gas emissions.
- To minimise the consumption of mains-supplied potable water.
- To ensure good thermal performance of buildings.

SEPP (Transport and Infrastructure) 2021 – This SEPP contains planning provisions:

- For infrastructure in NSW, such as hospitals, roads, railways, emergency services, water supply and electricity delivery.
- For child-care centres, schools, TAFEs and Universities.

Further details regarding these State Environmental Planning Policies and the circumstances in which they may apply to the subject and can be found on the Department of Planning's website.

Date: 24 January 2023

Cert No: 23346

REGIONAL PLANNING INSTRUMENTS

Hunter Regional Plan 2041
Upper Hunter Strategic Land Use Regional Plan 2012

LOCAL PLANNING INSTRUMENTS

The provisions of Muswellbrook Local Environmental Plan 2009 apply to this land.

Public exhibition for Employment Zones Reform

On 26 April 2023, Business and Industrial zones will be 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 https://www.planningportal.nsw.gov.au/employment-zones.

DEVELOPMENT CONTROL PLANS

The provisions of Muswellbrook Development Control Plan 2009 apply to this land.

2. ZONING AND LAND USE

LOCAL ENVIRONMENTAL PLANS

PLANNING INSTRUMENT	Muswellbrook Local Environmental Plan 2009
LAND USE ZONING	R1 General Residential

PERMITTED WITHOUT CONSENT

Home occupations

PERMITTED WITH CONSENT

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Educational establishments; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Group homes; Health consulting rooms; Home-based child care; Home businesses; Home industries; Hostels; Kiosks; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Recreation areas; Residential flat buildings; Respite day care centres; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Sewage reticulation systems; Shop top housing; Tank-based aquaculture; Water recycling facilities; Water supply systems.

PROHIBITED

Any development not specified above.

MINIMUM LAND DIMENSIONS FOR THE ERECTION OF A DWELLING

Under the provisions of the Muswellbrook Local Environmental Plan 2009, the minimum subdivision lot size IS NOT TO BE LESS than 600m2.

Date: 24 January 2023

Cert No: 23346

WHETHER THE LAND INCLUDES OR COMPRISES CRITICAL HABITAT

The subject land has not been declared as critical habitat.

WHETHER THE LAND IS IN A CONSERVATION AREA

The subject land is not within a conservation area.

WHETHER AN ITEM OF ENVIRONMENTAL HERITAGE IS SITUATED ON THE LAND

The land is NOT affected by any known or listed heritage item.

3. CONTRIBUTION PLANS

The Muswellbrook Section 94 Contributions Plan 2001 and Muswellbrook Section 94A Contributions Plan 2009 apply to all land within the Muswellbrook Shire Local Government Area.

4. COMPLYING DEVELOPMENT

CERTIFICATE UNDER SECTION 10.7(2) IDENTIFYING THE INFORMATION SET OUT IN CLAUSE 4 OF SCHEDULE 2 OF THE ENVIRONMENTAL PLANNING & ASSESSMENT REGULATIONS

Part 3 General Housing Code

YES. Complying development specified in the General Housing Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 3A Rural Housing Code

Not applicable to the land to which this certificate relates.

Part 4 Housing Alterations Code

YES. Complying development specified in the Housing Alterations Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 4A General Development Code

YES. Complying development specified in the General Development Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 5 Commercial and Industrial Alterations Code

Not applicable to the land to which this certificate relates.

Part 5A Commercial and Industrial (New Buildings and Additions) Code

Not applicable to the land to which this certificate relates.

Part 6 Subdivision Code

YES. Complying development specified in the Subdivision Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 7 Demolition Code

YES. Complying development specified in the Demolition Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 8 Fire Safety Code

YES. Complying development specified in the Fire Safety Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

5. EXEMPT DEVELOPMENT

The land is land on which exempt development may be carried out under the exempt development codes under SEPP (Exempt and Complying Development Codes) 2008.

6. AFFECTED BUILDING NOTICES AND BUILDING PRODUCT RECTIFICATION ORDERS

(a) There are NO 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

(b) There are NO 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.

7. LAND RESERVED FOR ACQUISITION

There are NO environmental planning instruments; deemed environmental planning instruments or draft environmental planning instruments applying to the land that provide for the acquisition of the land by a public authority, as referred to in section 27 of the Environmental Planning and Assessment Act 1979.

8. ROAD WIDENING AND ROAD REALIGNMENT

The subject land IS NOT affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) Any environmental planning instrument, or
(c) Any resolution of the council.

9. FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

The land is not categorised as Flood Prone land under an adopted flood study. Development on the land or part of the land may still be subject to flood related development controls if there is a waterway on the land. See Section 13 of Muswellbrook DCP 2009 for more information.

Date: 24 January 2023

Cert No: 23346

10. COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

The land IS NOT affected by a policy adopted by the council, or adopted by any other public authority that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding). Muswellbrook DCP 2009 contains requirements for new development to consider the issues of potentially contaminated land, and land use buffers to premises that may emit odours.

11. BUSH FIRE PRONE LAND

The land IS NOT bush fire prone land.

12. LOOSE-FILL ASBESTOS INSULATION

There are NO residential premises located on this land that are listed on the register that are required to be maintained under Division 1A of Part 8 of the *Home Building Act 1989*.

13. MINE SUBSIDENCE

The land IS NOT WITHIN a Mine Subsidence District proclaimed under section 15 of the Mine Subsidence Compensation Act, 1961.

14. PAPER SUBDIVISION INFORMATION

There is NOT an adopted development plan or subdivision order that applies to the land.

15. PROPERTY VEGETATION PLANS

Council has NOT been notified of the existence of such a plan or if the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.

16. BIODIVERSITY STEWARDSHIP SITES

Council has NOT been notified that the land is a biodiversity stewardship site under a biodiversity stewardship agreement under the Biodiversity Conservation Act 2016.

17. BIODIVERSITY CERTIFIED LAND

The land IS NOT biodiversity certified under the Biodiversity Conservation Act 2016.

18. ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

Council has NOT been notified of any order made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

19. ANNUAL CHARGES UNDER THE LOCAL GOVERNMENT ACT 1993 FOR COASTAL PROTECTION SERVICES

The Coastal Management Act 2016 DOES NOT apply to this council area.

Date: 24 January 2023

Cert No: 23346

20. WESTERN SYDNEY AEROTROPOLIS

State Environmental Planning Policy (Precincts – Western Parkland City) 2021 DOES NOT apply to this council area.

21. DEVELOPMENT CONSENT CONDITIONS FOR SENIORS HOUSING

There is NOT a current site compatibility certificate (of which the council is aware), issued under clause 25 of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land.

22. SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

There is NOT a current site compatibility certificate for affordable rental housing (of which the council is aware), issued under clause 37 of State Environmental Planning Policy (Affordable Rental Housing) 2007 in respect of proposed development on the land.

The accuracy and currency of the details provided by agencies external to Council have not be verified by Muswellbrook Shire Council and should be verified by the applicant.

ADDITIONAL INFORMATION PURSUANT TO SECTION 10.7(5) OF THE ACT

Council is unaware of any other relevant matters that may affect the land.

For further information, please contact
Planning, Environment & Regulatory Services
on (02) 6549 3700.

D Finnigan
Acting General Manager

Per: _____

PLANNING CERTIFICATE UNDER SECTION 10.7 ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Enquiries	Planning
Contact	02 6549 3700
Receipt no.	1480103
Your reference	38 Maitland Street Muswellbrook

Date: 20 January 2023

Assessment: 39024 **Cert No: 23345**

Lotsearch
25/100 Mount Street
NORTH SYDNEY NSW 2060

Owner (as recorded by Council)
Mr R & Mrs R Mahajan

Property Description: 38 Maitland Street MUSWELLBROOK 2333
LOT: 8 DP: 6758

Land to which the certificate relates

The information contained in this certificate relates only to the lot or lots described on this certificate. Separate planning certificates can be obtained upon application for the other lots, those certificates may contain different information than is contained in this certificate.

CERTIFICATE UNDER SECTION 10.7(2) ENVIRONMENTAL PLANNING & ASSESSMENT ACT

1. NAMES OF RELEVANT PLANNING INSTRUMENTS AND DEVELOPMENT CONTROL PLANS

STATE ENVIRONMENTAL PLANNING POLICIES

The following State Environmental Planning Policies apply to land within the Muswellbrook Shire LGA:

SEPP (Biodiversity and Conservation) 2021 – This SEPP contains:

- Planning rules and controls for the clearing of native vegetation in NSW on land zoned for urban and environmental purposes that is not linked to a development application.
- The land use planning and assessment framework for koala habitat.

SEPP (Building Sustainability Index: BASIX) 2004 - This SEPP operates in conjunction with Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004 to ensure consistent approach to minimizing water and energy use in new dwellings.

SEPP (Exempt and Complying Development Codes) 2008 – The policy provides exempt and complying codes that have State-wide application, identifying types of development that are of minimal environmental impact.

SEPP No. 65 (Design Quality of Residential Apartment Development) – Aims to raise the design quality of residential flat development through the application of a series of design principles.

SEPP (Housing) 2021 - The principles of this Policy are to enable the development of diverse housing types, including affordable housing and purpose-built rental housing, reinforce the importance of designing housing for climate, hazards and to reflect the locality it is being built in, and to mitigate the loss of affordable rental housing.

SEPP (Industry and Employment) 2021 – This SEPP contains planning provisions for advertising signage in NSW.

Date: 20 January 2023

Cert No: 23345

SEPP (Planning Systems) 2021 – This SEPP:

- Identifies State or Regionally significant development, State significant infrastructure, and critical State significant infrastructure.
- Provides consideration of development delivery plans by local Aboriginal land councils in planning assessment.
- Allows the Planning Secretary to elect to be the concurrence authority for certain development that requires concurrence under nominated Staten Environmental planning policies.

SEPP (Precincts - Regional) 2021 – This SEPP contains planning provisions for precinct planning, which is a form of strategic planning applied to a specified geographic area. The precincts in this SEPP are located outside the Greater Sydney Region Plan.

SEPP (Primary Production) 2021 – This SEPP contains planning provisions:

- To manage primary production and rural development including supporting sustainable agriculture.
- For the protection of prime agricultural land of state and regional significance as well as regionally significant mining and extractive resources.

SEPP (Resilience and Hazards) 2021 – This SEPP contains planning provisions:

- To manage hazardous and offensive development.
- To provide a state-wide planning framework for the remediation of contaminated land and to minimise the risk of harm.

SEPP (Resources and Energy) 2021 – This SEPP contains planning provisions:

- For the assessment and development of mining, petroleum production and extractive material resource proposals in NSW.
- Identifying location where open cut mining and coal seam gas projects are prohibited.
- To facilitate the development of extractive resources in proximity to the population of the Sydney Metropolitan Area by identifying land which contains extractive material of regional significance.

SEPP (Sustainable Buildings) 2022 – This SEPP contains planning provisions:

- To encourage the design and delivery of sustainable buildings.
- To monitor the embodied emissions of materials used in construction of buildings.
- To minimise the consumption of energy.
- To reduce greenhouse gas emissions.
- To minimise the consumption of mains-supplied potable water.
- To ensure good thermal performance of buildings.

SEPP (Transport and Infrastructure) 2021 – This SEPP contains planning provisions:

- For infrastructure in NSW, such as hospitals, roads, railways, emergency services, water supply and electricity delivery.
- For child-care centres, schools, TAFEs and Universities.

Further details regarding these State Environmental Planning Policies and the circumstances in which they may apply to the subject and can be found on the Department of Planning's website.

Date: 20 January 2023

Cert No: 23345

REGIONAL PLANNING INSTRUMENTS

Hunter Regional Plan 2041
Upper Hunter Strategic Land Use Regional Plan 2012

LOCAL PLANNING INSTRUMENTS

The provisions of Muswellbrook Local Environmental Plan 2009 apply to this land.

Public exhibition for Employment Zones Reform

On 26 April 2023, Business and Industrial zones will be 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 https://www.planningportal.nsw.gov.au/employment-zones.

DEVELOPMENT CONTROL PLANS

The provisions of Muswellbrook Development Control Plan 2009 apply to this land.

2. ZONING AND LAND USE

LOCAL ENVIRONMENTAL PLANS

PLANNING INSTRUMENT	Muswellbrook Local Environmental Plan 2009
LAND USE ZONING	R1 General Residential

PERMITTED WITHOUT CONSENT

Home occupations

PERMITTED WITH CONSENT

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Educational establishments; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Group homes; Health consulting rooms; Home-based child care; Home businesses; Home industries; Hostels; Kiosks; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Recreation areas; Residential flat buildings; Respite day care centres; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Sewage reticulation systems; Shop top housing; Tank-based aquaculture; Water recycling facilities; Water supply systems.

PROHIBITED

Any development not specified above.

MINIMUM LAND DIMENSIONS FOR THE ERECTION OF A DWELLING

Under the provisions of the Muswellbrook Local Environmental Plan 2009, the minimum subdivision lot size IS NOT TO BE LESS than 600m2.

Date: 20 January 2023

Cert No: 23345

WHETHER THE LAND INCLUDES OR COMPRISES CRITICAL HABITAT

The subject land has not been declared as critical habitat.

WHETHER THE LAND IS IN A CONSERVATION AREA

The subject land is not within a conservation area.

WHETHER AN ITEM OF ENVIRONMENTAL HERITAGE IS SITUATED ON THE LAND

The land is NOT affected by any known or listed heritage item.

3. CONTRIBUTION PLANS

The Muswellbrook Section 94 Contributions Plan 2001 and Muswellbrook Section 94A Contributions Plan 2009 apply to all land within the Muswellbrook Shire Local Government Area.

4. COMPLYING DEVELOPMENT

CERTIFICATE UNDER SECTION 10.7(2) IDENTIFYING THE INFORMATION SET OUT IN CLAUSE 4 OF SCHEDULE 2 OF THE ENVIRONMENTAL PLANNING & ASSESSMENT REGULATIONS

Part 3 General Housing Code

YES. Complying development specified in the General Housing Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 3A Rural Housing Code

Not applicable to the land to which this certificate relates.

Part 4 Housing Alterations Code

YES. Complying development specified in the Housing Alterations Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 4A General Development Code

YES. Complying development specified in the General Development Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 5 Commercial and Industrial Alterations Code

Not applicable to the land to which this certificate relates.

Part 5A Commercial and Industrial (New Buildings and Additions) Code

Not applicable to the land to which this certificate relates.

Date: 20 January 2023

Cert No: 23345

Part 6 Subdivision Code

YES. Complying development specified in the Subdivision Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 7 Demolition Code

YES. Complying development specified in the Demolition Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

Part 8 Fire Safety Code

YES. Complying development specified in the Fire Safety Code may be carried out on this land in certain circumstances pursuant to Clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

5. EXEMPT DEVELOPMENT

The land is land on which exempt development may be carried out under the exempt development codes under SEPP (Exempt and Complying Development Codes) 2008.

6. AFFECTED BUILDING NOTICES AND BUILDING PRODUCT RECTIFICATION ORDERS

(a) There are NO 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

(b) There are NO 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.

7. LAND RESERVED FOR ACQUISITION

There are NO environmental planning instruments; deemed environmental planning instruments or draft environmental planning instruments applying to the land that provide for the acquisition of the land by a public authority, as referred to in section 27 of the Environmental Planning and Assessment Act 1979.

8. ROAD WIDENING AND ROAD REALIGNMENT

The subject land IS NOT affected by any road widening or road realignment under:
(a) Division 2 of Part 3 of the Roads Act 1993, or
(b) Any environmental planning instrument, or
(c) Any resolution of the council.

9. FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

The land is within a flood planning area and any development on the land is subject to flood-related development controls in the Muswellbrook Floodplain Risk Management Study and Plan and Muswellbrook DCP 2009.

Date: 20 January 2023

Cert No: 23345

10. COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

The land IS NOT affected by a policy adopted by the council, or adopted by any other public authority that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding). Muswellbrook DCP 2009 contains requirements for new development to consider the issues of potentially contaminated land, and land use buffers to premises that may emit odours.

11. BUSH FIRE PRONE LAND

The land IS NOT bush fire prone land.

12. LOOSE-FILL ASBESTOS INSULATION

There are NO residential premises located on this land that are listed on the register that are required to be maintained under Division 1A of Part 8 of the *Home Building Act 1989*.

13. MINE SUBSIDENCE

The land IS NOT WITHIN a Mine Subsidence District proclaimed under section 15 of the Mine Subsidence Compensation Act, 1961.

14. PAPER SUBDIVISION INFORMATION

There is NOT an adopted development plan or subdivision order that applies to the land.

15. PROPERTY VEGETATION PLANS

Council has NOT been notified of the existence of such a plan or if the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.

16. BIODIVERSITY STEWARDSHIP SITES

Council has NOT been notified that the land is a biodiversity stewardship site under a biodiversity stewardship agreement under the Biodiversity Conservation Act 2016.

17. BIODIVERSITY CERTIFIED LAND

The land IS NOT biodiversity certified under the Biodiversity Conservation Act 2016.

18. ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

Council has NOT been notified of any order made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

19. ANNUAL CHARGES UNDER THE LOCAL GOVERNMENT ACT 1993 FOR COASTAL PROTECTION SERVICES

The Coastal Management Act 2016 DOES NOT apply to this council area.

Date: 20 January 2023

Cert No: 23345

20. WESTERN SYDNEY AEROTROPOLIS

State Environmental Planning Policy (Precincts – Western Parkland City) 2021 DOES NOT apply to this council area.

21. DEVELOPMENT CONSENT CONDITIONS FOR SENIORS HOUSING

There is NOT a current site compatibility certificate (of which the council is aware), issued under clause 25 of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land.

22. SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

There is NOT a current site compatibility certificate for affordable rental housing (of which the council is aware), issued under clause 37 of State Environmental Planning Policy (Affordable Rental Housing) 2007 in respect of proposed development on the land.

The accuracy and currency of the details provided by agencies external to Council have not be verified by Muswellbrook Shire Council and should be verified by the applicant.

ADDITIONAL INFORMATION PURSUANT TO SECTION 10.7(5) OF THE ACT

Council is unaware of any other relevant matters that may affect the land.

For further information, please contact
Planning, Environment & Regulatory Services
on (02) 6549 3700.

D Finnigan
Acting General Manager

Per: _____

HUNTER
ENVIRONMENTAL CONSULTING

Annex C

Cadastral Records Enquiry Report : SP 18568

Ref : LS039747_EP 36-38 Maitland St

Locality : MUSWELLBROOK
Parish : BROUGHAM
LGA : MUSWELLBROOK
County : DURHAM

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

M. MUSWELLBROOK

Plan of

DP 6758

6758

(6)

subdivision of part of Portion 2 (P2) of 2560ac. Francis Forbes

~~Shire of~~

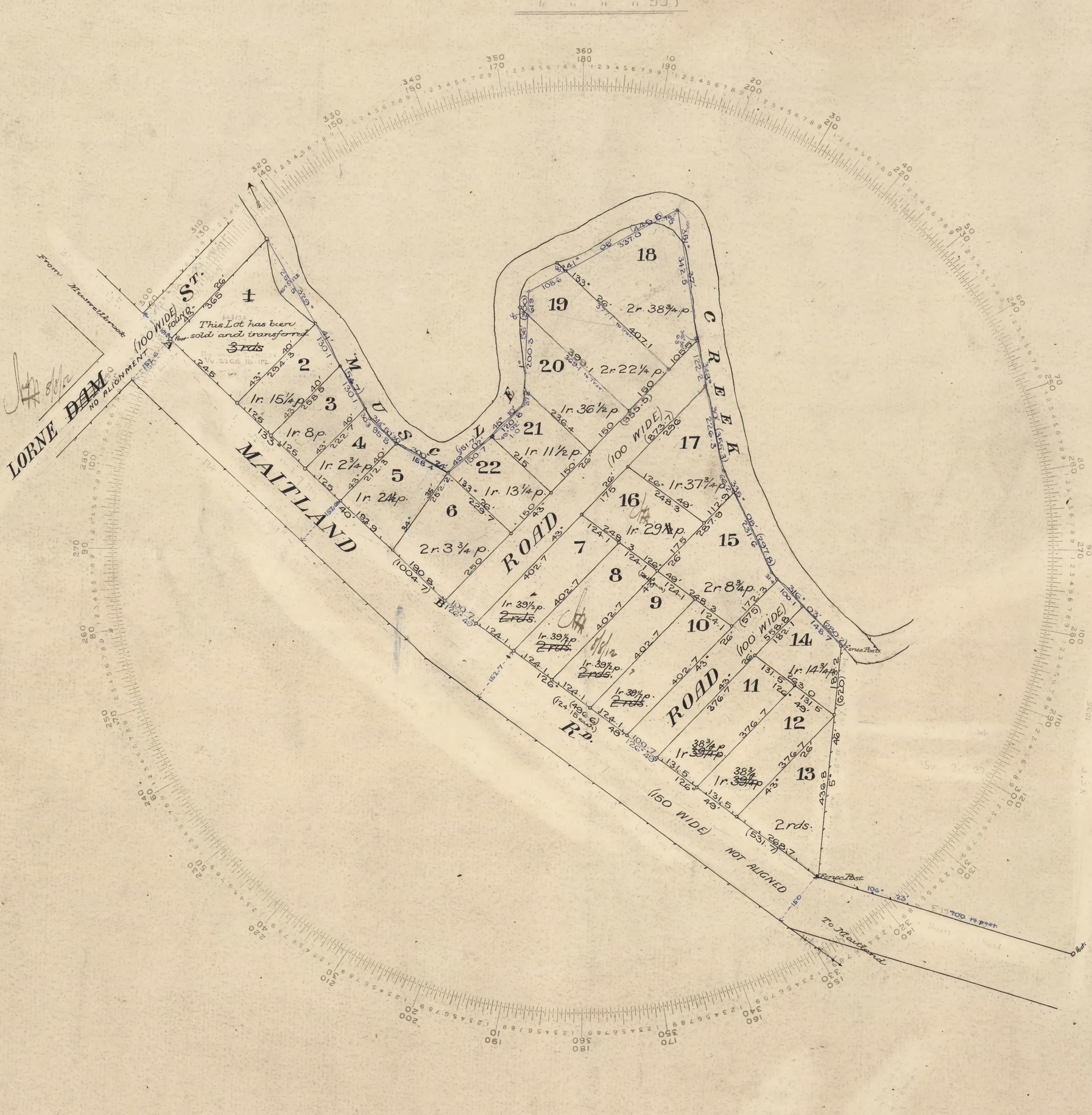
Parish of Brougham County of Durham

Scale 2chs to an Inch

Municipality of Muswellbrook

Part of Appl^n Plan 2778

C.T. Vo. 148 Fo. 94 } T. in C.
" " " 95 }



B.R. 260 p. 268
H.T.W. 7.6.12

Date of Survey July 1911
Assumed Magnetic Variation
Azimuth taken from A.F. Needle

Subscribed and declared before me at Newcastle
this 2nd day of August A.D. 1911
L. Hemmington J.P.

I Alfred Francis Hall of Newcastle.
Licensed Surveyor, specially licensed under the Real Property Act, do hereby solemnly and sincerely declare that the boundaries and measurements shown on this Plan are correct for the purposes of the said Act and that the said Plan and the survey of the land to which the same relates, have been prepared and made by me, or under my immediate supervision, and I make this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act 1900.

A.F. Hall
Licensed Surveyor

7443

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
23/1/2023 2:48PM

FOLIO: 8/6758

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 3391 FOL 179

Recorded	Number	Type of Instrument	C.T. Issue
18/2/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
13/6/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
8/12/1994	U850751	TRANSFER	
8/12/1994	U850752	MORTGAGE	EDITION 1
16/3/2000	6645985	DISCHARGE OF MORTGAGE	
16/3/2000	6645986	MORTGAGE	EDITION 2
22/3/2007	AD7642	DISCHARGE OF MORTGAGE	
22/3/2007	AD7643	TRANSFER	
22/3/2007	AD7644	MORTGAGE	EDITION 3
12/7/2010	AF521428	DISCHARGE OF MORTGAGE	
12/7/2010	AF521429	TRANSFER	
12/7/2010	AF521430	MORTGAGE	EDITION 4
1/9/2018	AN678863	DEPARTMENTAL DEALING	EDITION 5 CORD ISSUED
17/6/2021	AR152608	DISCHARGE OF MORTGAGE	EDITION 6
12/9/2022	AS463880	TRANSFER	
12/9/2022	AS463881	MORTGAGE	EDITION 7

*** END OF SEARCH ***

97-01T

TRANSFER

Real Property Act, 1900

U 850751 G

(1) Office of S

$2.00

17119A 0605 04 B00440140/03

(A) LAND TRANSFERRED

Show no more than 20 References to Title.
If appropriate, specify the share transferred.

Folio Identifier 8/6758

(B) LODGED BY

L.T.O. Box	Name, Address or DX and Telephone
45A	NATIONAL AUSTRALIA BANK LIMITED National Australia Bank Limited 255 George Street, Sydney 237-1111 FAX 237-1284 REFERENCE (max. 15 characters): 45A XX9601

(C) TRANSFEROR RONALD JORDAN

OFFICE OF STATE REVENUE (N.S.W. TREASURY) 1994/95 N12 ALTERATION NOTED

(D) acknowledges receipt of the consideration of Ninety-four thousand dollars

and as regards the land specified above transfers to the Transferee an estate in fee simple

(E) subject to the following **ENCUMBRANCES** 1. ..... 2. ..... 3. .....

(F) TRANSFEREE JT 2

T

EDWARD LENARD BOTHAM and BRONWYN GAY BOTHAM

(G) TENANCY: Joint Tenants

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATED** 28th NOVEMBER, 1994

Signed in my presence by the Transferor who is personally known to me.

R.B. Jordan
Signature of Witness

PATRICIA C. JORDAN
Name of Witness (BLOCK LETTERS)

44 GOVERNORS DR., LAPSTONE
Address of Witness

Signature of Transferor

Signed in my presence by the Transferee who is personally known to

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address of Witness

Alexander John Irving
Signature of Transferee

Solicitor for

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only) 296

NOS

Form: 01T
Licence: 04-02-326
Licensee: Locus Pty Limited
Firm Name: Halletts Solicitors

TRANSFER

New South Wales
Real Property Act 1900

AF521429Y

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises th... required by this form for the establishment and maintenance of the Real Property Act... Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 85342830 1178
Duty: $10.00 Trans No: SB50372
Asst details: T5

(A) **FOLIO OF THE REGISTER**

8/6758

(B) **LODGED BY**

Document Collection Box	Name, Address or DX, Telephone, and LLPN if any	CODES
127x	Perpetual LMS LLPN: 123064J Reference:	T TW (Sheriff)

(C) **TRANSFEROR**

Joshua Edward BOTHAM and Katrina Lee BOTHAM

(D) **CONSIDERATION**

The transferor acknowledges receipt of the consideration of $321,000.00 and as regards

(E) **ESTATE**

the above folio of the Register transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable): _____

(H) **TRANSFEREE**

Betty May ELLIS

(I) **TENANCY:**

DATE 14th May 2010

(J) 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:

Name of witness: David Pang Cum

Address of witness: 15 McGregor Street
Muswellbrook, NSW.

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

Signature of transferor:

K Botham

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

Signature:

Signatory's name: MICHAEL VINCENT O'BRIEN
Signatory's capacity: Solicitor for the transferee/s

RELODGED
- 9 JUL 2010
TIME: 3:45

STATUTORY DECLARATION

I, Katrina Lee Botham of Muswellbrook in the State of New South Wales, do solemnly and sincerely declare as follows :-

1) I am one of the registered proprietors of the property known as 38 Maitland Street, Muswellbrook, being the whole of the land in the Certificate of Title 8/6758.

2) On 4 day of October, 2009, I did marry Joshua Edward Botham at The Pearl South Pacific in Fiji.

3) I am identical with the person described as Katrina Lee Pang Cum in the said Certificate of Title.

AND I MAKE this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of the Oaths Act, 1900.

Subscribed and declared
at Singleton
this 2 day of
July 2010,
before me:-

Katrina
*K Botham

.....
Solicitor/Justice of the Peace

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 8/6758

SEARCH DATE	TIME	EDITION NO	DATE
23/1/2023	2:48 PM	7	12/9/2022

LAND

LOT 8 IN DEPOSITED PLAN 6758
AT MUSWELLBROOK
LOCAL GOVERNMENT AREA MUSWELLBROOK
PARISH OF BROUGHAM COUNTY OF DURHAM
TITLE DIAGRAM DP6758

FIRST SCHEDULE

ROSY MAHAJAN
ROHIT MAHAJAN
AS JOINT TENANTS (T AS463880)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AS463881 MORTGAGE TO REGIONAL AUSTRALIA BANK LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

HUNTER
ENVIRONMENTAL CONSULTING

Annex D

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 19 Jan 2023 14:38:04

Reference: LS039747 EP

Address: 36-38 Maitland Street, Muswellbrook, NSW 2333

Dataset Listing

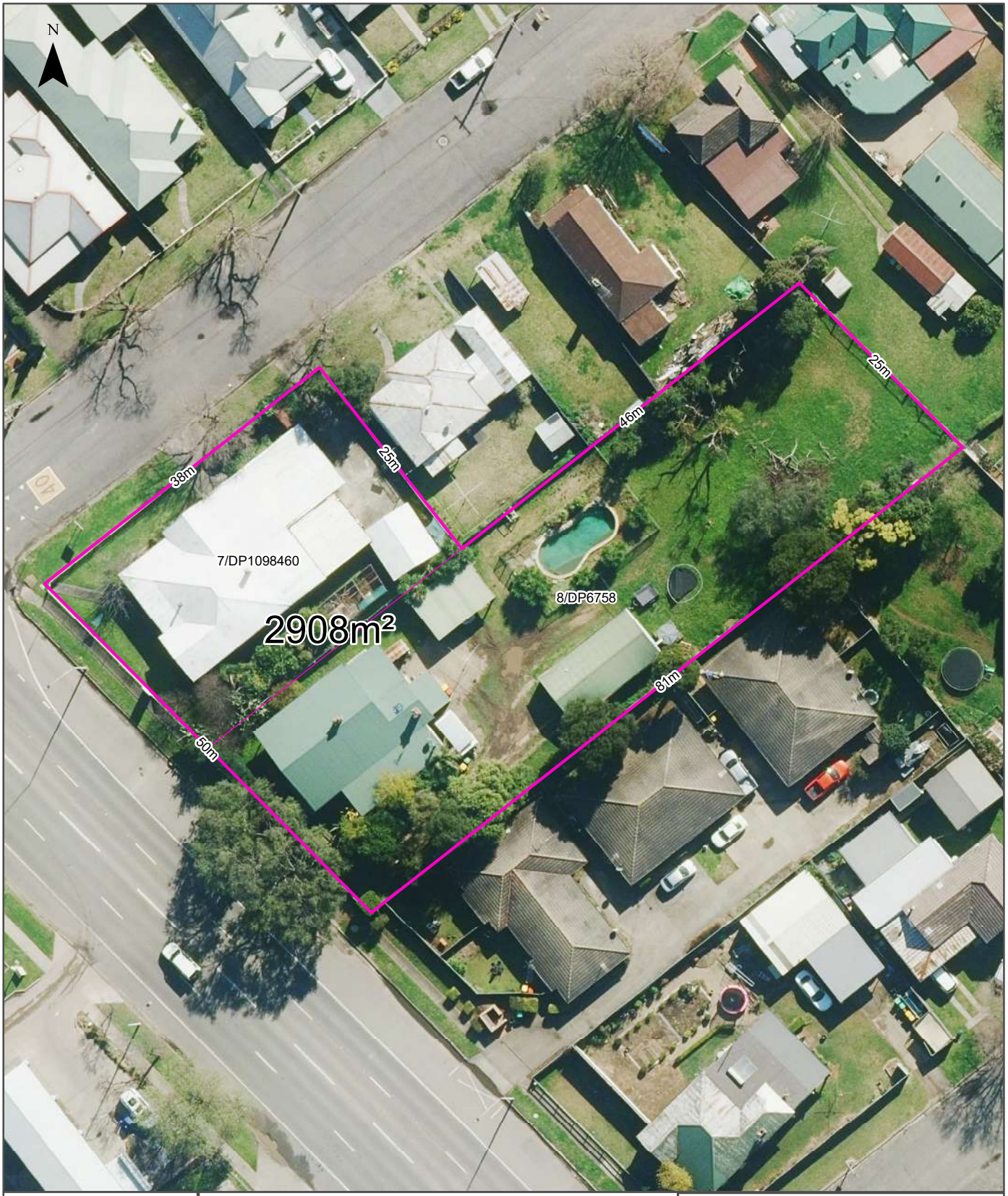
Datasets contained within this report, detailing their source and data currency:

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	04/11/2022	04/11/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	10/01/2023	12/12/2022	Monthly	1000m	0	1	9
Contaminated Land Records of Notice	Environment Protection Authority	20/12/2022	20/12/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	06/12/2022	14/07/2021	Quarterly	1000m	0	0	1
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	1	6
EPA PFAS Investigation Program	Environment Protection Authority	10/01/2023	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	06/01/2023	06/01/2023	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	06/01/2023	06/01/2023	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	13/12/2022	13/12/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	1	1
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	20/12/2022	20/12/2022	Monthly	1000m	0	0	3
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	20/12/2022	20/12/2022	Monthly	1000m	0	0	2
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	20/12/2022	20/12/2022	Monthly	1000m	0	4	4
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	0	22	29
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	64	64
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	3	18
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	12	18
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	44
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	15/11/2022	15/11/2022	Quarterly	1000m	0	0	5
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	51

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	2	2	3
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	1
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	18/08/2022	27/07/2020	Annually	1000m	1	1	2
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	14/12/2022	02/12/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	1	1	1
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	09/11/2022	09/11/2022	Quarterly	1000m	0	0	1
Current Mining Titles	NSW Department of Industry	13/12/2022	13/12/2022	Monthly	1000m	0	0	1
Mining Title Applications	NSW Department of Industry	13/12/2022	13/12/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	13/12/2022	13/12/2022	Monthly	1000m	6	6	7
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/12/2022	02/12/2022	Monthly	1000m	1	5	30
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	1
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	2
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	14/12/2022	02/12/2022	Monthly	1000m	0	1	49
Bush Fire Prone Land	NSW Rural Fire Service	16/01/2023	25/10/2022	Weekly	1000m	0	0	3
Eastern Bushland Database (North Region)	NSW Office of Environment & Heritage	24/07/2016	01/01/1991	Annually	1000m	0	0	0
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	16/01/2023	16/01/2023	Weekly	10000m	-	-	-

Site Diagram

36-38 Maitland Street, Muswellbrook, NSW 2333



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 2908m²

Total Perimeter: 265m

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 — 15 Meters — 30

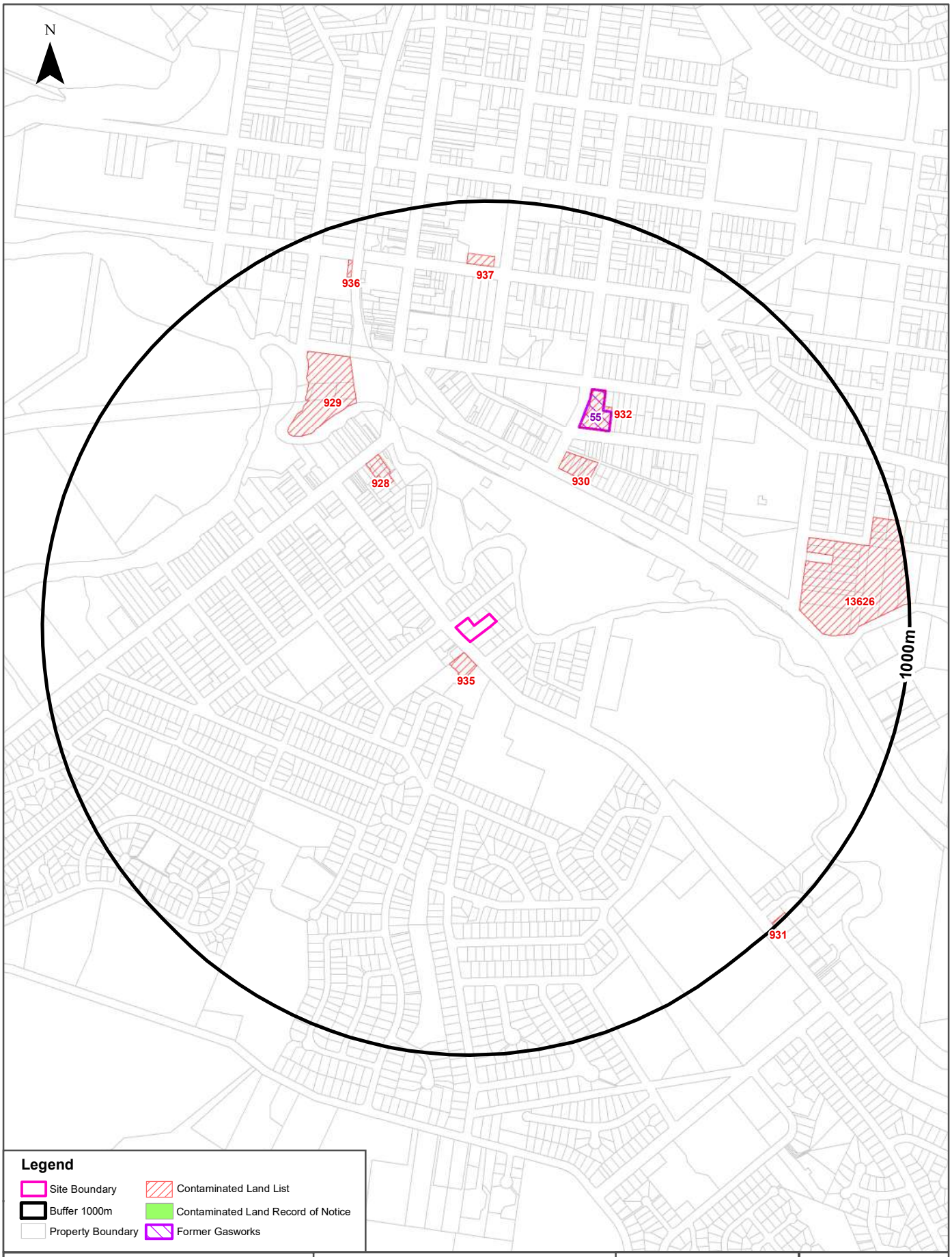
Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 January 2023

Contaminated Land

36-38 Maitland Street, Muswellbrook, NSW 2333



Contaminated Land

36-38 Maitland Street, Muswellbrook, NSW 2333

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
935	United Branded (Former Mobil) Service Station Muswellbrook	49-51 Maitland Street	Muswellbrook	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	31m	South
928	Caltex Service Station	12-16 Sydney Street	Muswellbrook	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	374m	North West
930	Former Caltex Depot	47-50 Victoria Street	Muswellbrook	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	390m	North East
932	Former Gasworks	Corner Carl Street and Foley STREET	Muswellbrook	Gasworks	Regulation under CLM Act not required	Current EPA List	Premise Match	500m	North East
929	Former Caltex Depot	1 Lower William Street	Muswellbrook	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	586m	North West
13626	Former Pit Top No. 1 Colliery Muswellbrook Coal	Corner Clendinning Street and Victoria STREET	MUSWELLBROOK	Other Industry	Regulation under CLM Act not required	Current EPA List	Premise Match	732m	East
937	Woolworths Petrol	72 Brook Street	Muswellbrook	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	841m	North
936	Vacant Rail Land	27 Brook Street	Muswellbrook	Unclassified	Regulation under CLM Act not required	Current EPA List	Premise Match	872m	North
931	Caltex Muswellbrook Service Station	84-86 Maitland Street	Muswellbrook	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	987m	South East

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.

EPA site management class	Explanation
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

36-38 Maitland Street, Muswellbrook, NSW 2333

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

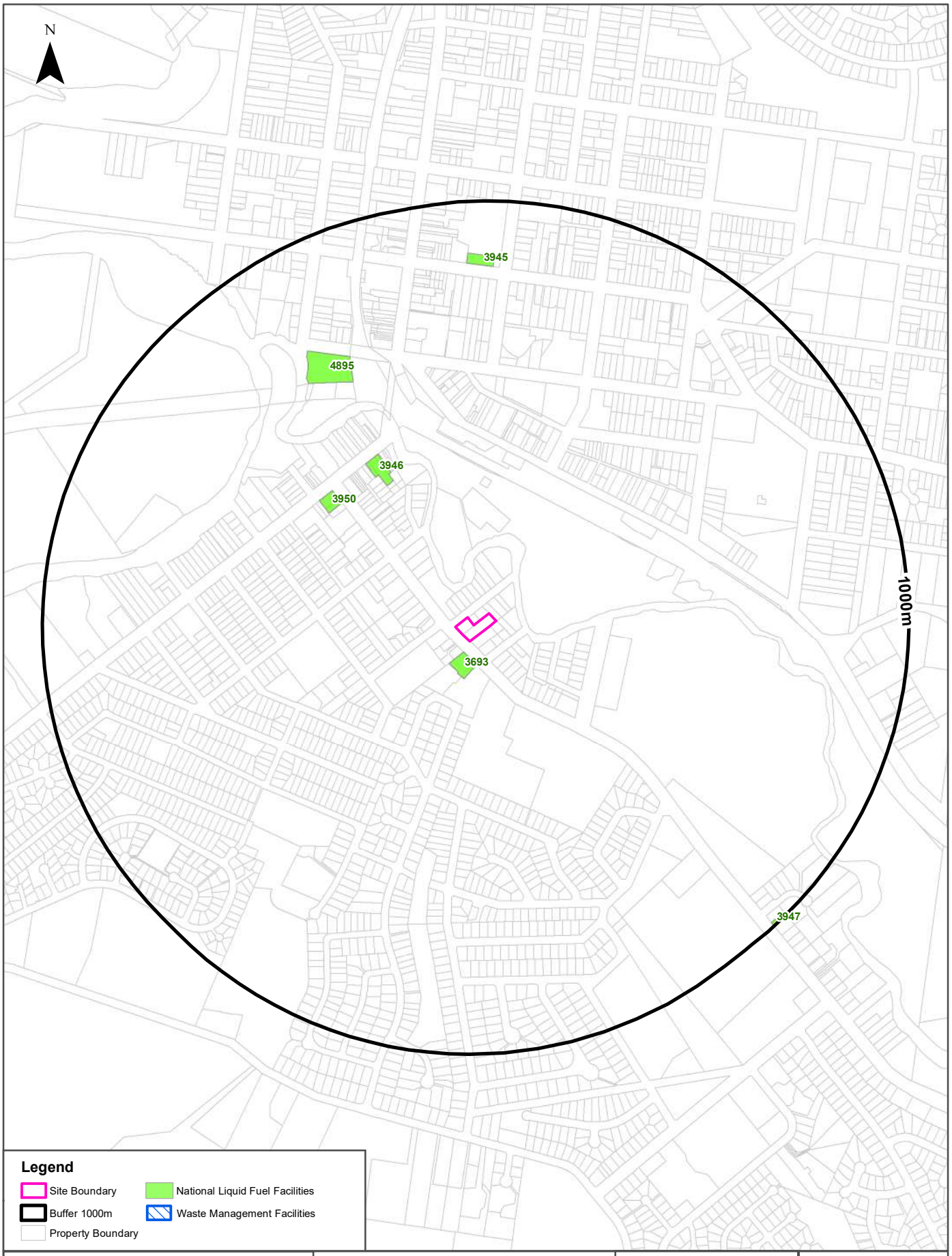
Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
55	Carl Street, Muswellbrook	Muswellbrook Shire Council	Contact council	Premise Match	500m	North East

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

36-38 Maitland Street, Muswellbrook, NSW 2333



Waste Management & Liquid Fuel Facilities

36-38 Maitland Street, Muswellbrook, NSW 2333

National Waste Management Site Database

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

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist	Direction
N/A	No records in buffer											

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
3693	7-Eleven Pty Ltd	Mobil Muswellbrook	49-51 Maitland Street	Muswellbrook	Petrol Station	Operational		13/07/2012	Premise Match	31m	South
3946	Caltex	Caltex Muswellbrook	12-20 Sydney Street	Muswellbrook	Petrol Station	Operational		25/07/2011	Premise Match	374m	North West
3950	BP	BP Muswellbrook	42-50 Sydney Street	Muswellbrook	Petrol Station	Operational		25/07/2011	Premise Match	408m	North West
4895	Caltex	Muswellbrook	1 Lower William Street	Muswellbrook	Fuel Depot	Operational	Buchannan's Bulk Fuel Supplies Pty Ltd	04/10/2012	Premise Match	634m	North West
3945	Caltex	Woolworths Caltex Muswellbrook	68-78 Brook Street	Muswellbrook	Petrol Station	Operational		25/07/2011	Premise Match	841m	North
3947	Caltex	Caltex Muswellbrook	84-86 Maitland Street	Muswellbrook	Petrol Station	Operational		25/07/2011	Premise Match	987m	South East

PFAS Investigation & Management Programs

36-38 Maitland Street, Muswellbrook, NSW 2333

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

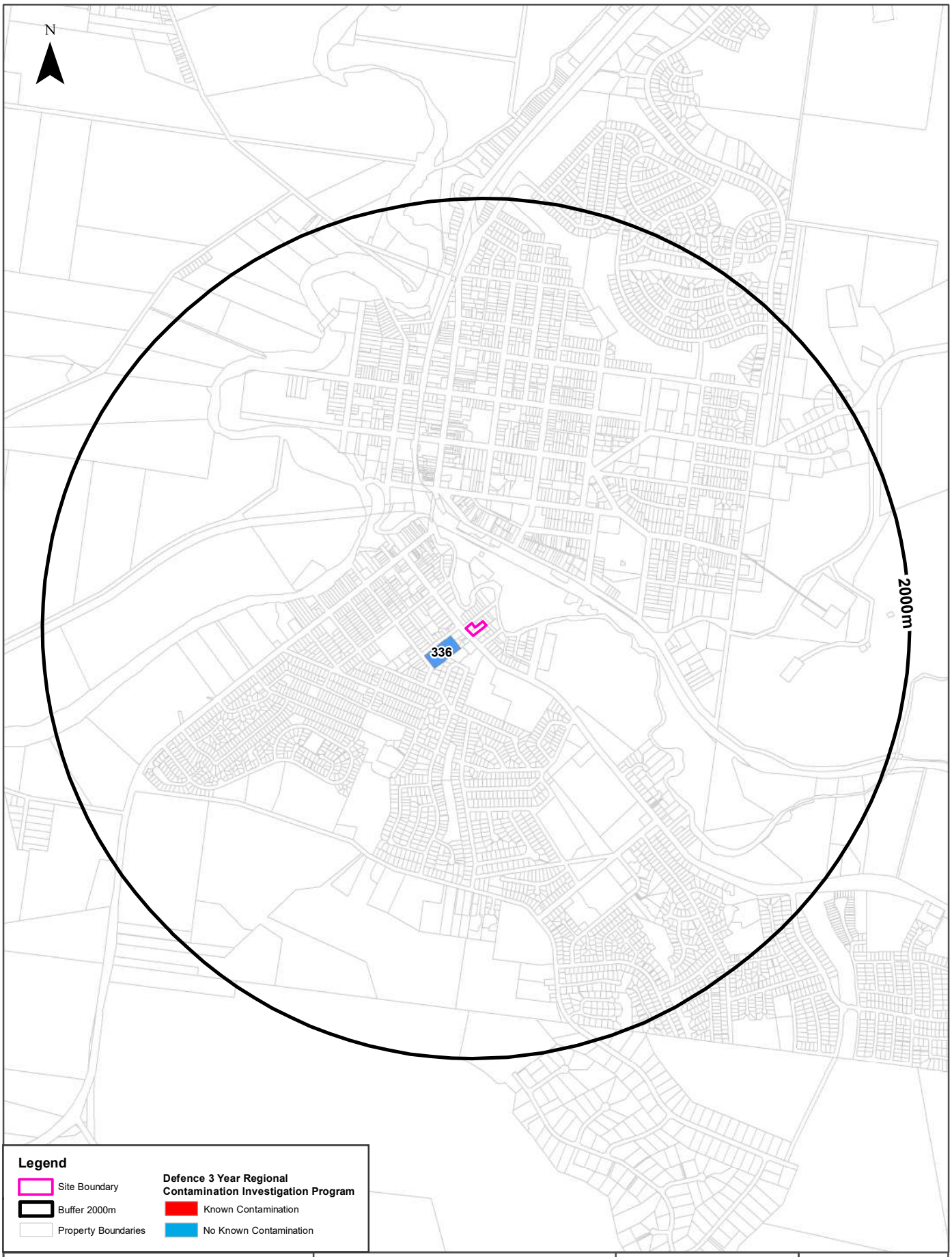
Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

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 3 Year Regional Contamination Investigation Program

36-38 Maitland Street, Muswellbrook, NSW 2333



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Defence Sites

36-38 Maitland Street, Muswellbrook, NSW 2333

Defence 3 Year Regional Contamination Investigation Program

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
336	Muswellbrook GRES Depot	Muswellbrook, New South Wales	NO	Premise Match	79m	South West

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

EPA Other Sites with Contamination Issues

36-38 Maitland Street, Muswellbrook, NSW 2333

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

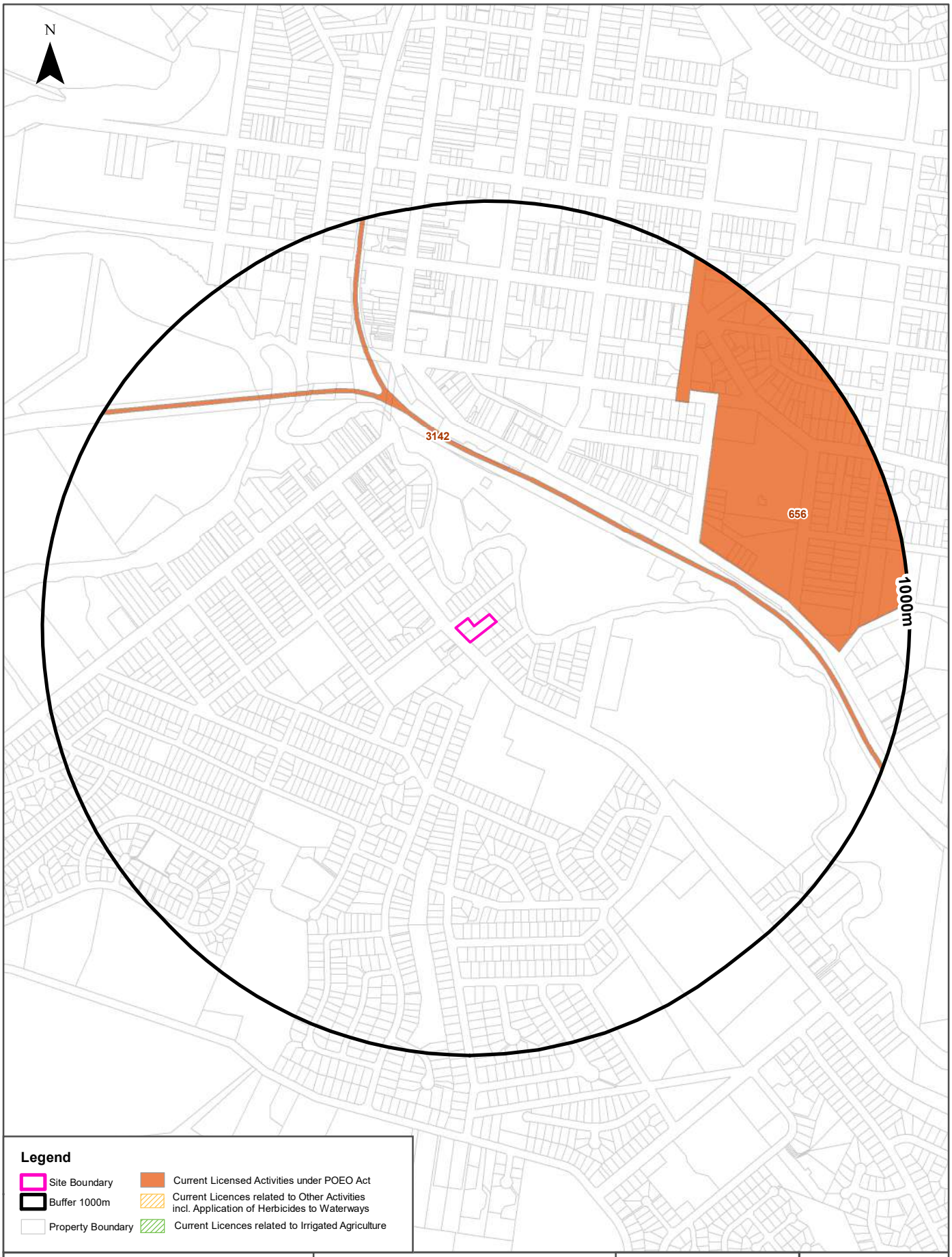
Sites within the dataset buffer:

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

36-38 Maitland Street, Muswellbrook, NSW 2333



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

EPA Activities

36-38 Maitland Street, Muswellbrook, NSW 2333

Licensed Activities under the POEO Act 1997

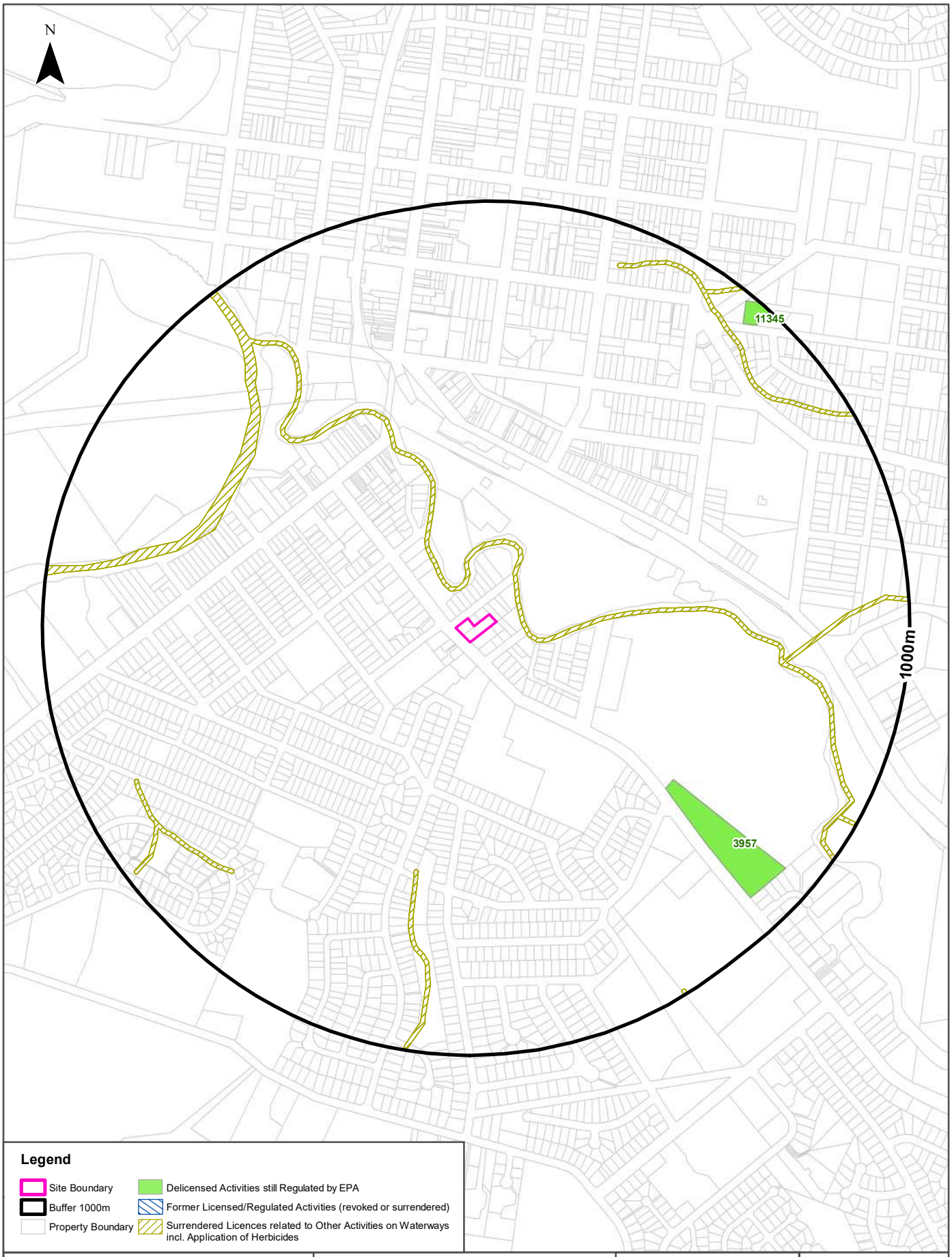
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		AUSTRALIAN RAIL TRACK CORPORATION (ARTC) NETWORK, SYDNEY, NSW 2001		Railway systems activities	Network of Features	331m	North
656	MUSWELLBROOK COAL COMPANY LTD	MUSWELLBROOK COLLIERY HOLDING	COAL ROAD	MUSWELLBROOK	Mining for coal	Area Match	526m	North East
656	MUSWELLBROOK COAL COMPANY LTD	MUSWELLBROOK COLLIERY HOLDING	COAL ROAD	MUSWELLBROOK	Coal works	Area Match	526m	North East

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

36-38 Maitland Street, Muswellbrook, NSW 2333



Property Boundary Data Source:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 January 2023

EPA Activities

36-38 Maitland Street, Muswellbrook, NSW 2333

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
3957	FORESTRY CORPORATION OF NEW SOUTH WALES		LOWER NORTH EAST REGION (L.N.E.R) STATE FORESTS AND CROWN-TIMBER LANDS (EX.PLANTATIONS) WITHIN THE L.N.E.R. SHOWN ON MAP 1 - L.N.E.R. FOREST AGREEMENT		Logging operations	Network of Features	573m	South East
11345	HUNTER AND NEW ENGLAND AREA HEALTH SERVICE	MUSWELLBROOK DISTRICT HOSPITAL	BRENTWOOD STREET	MUSWELLBROOK	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	933m	North East

Delicensed Activities Data Source: Environment Protection Authority

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

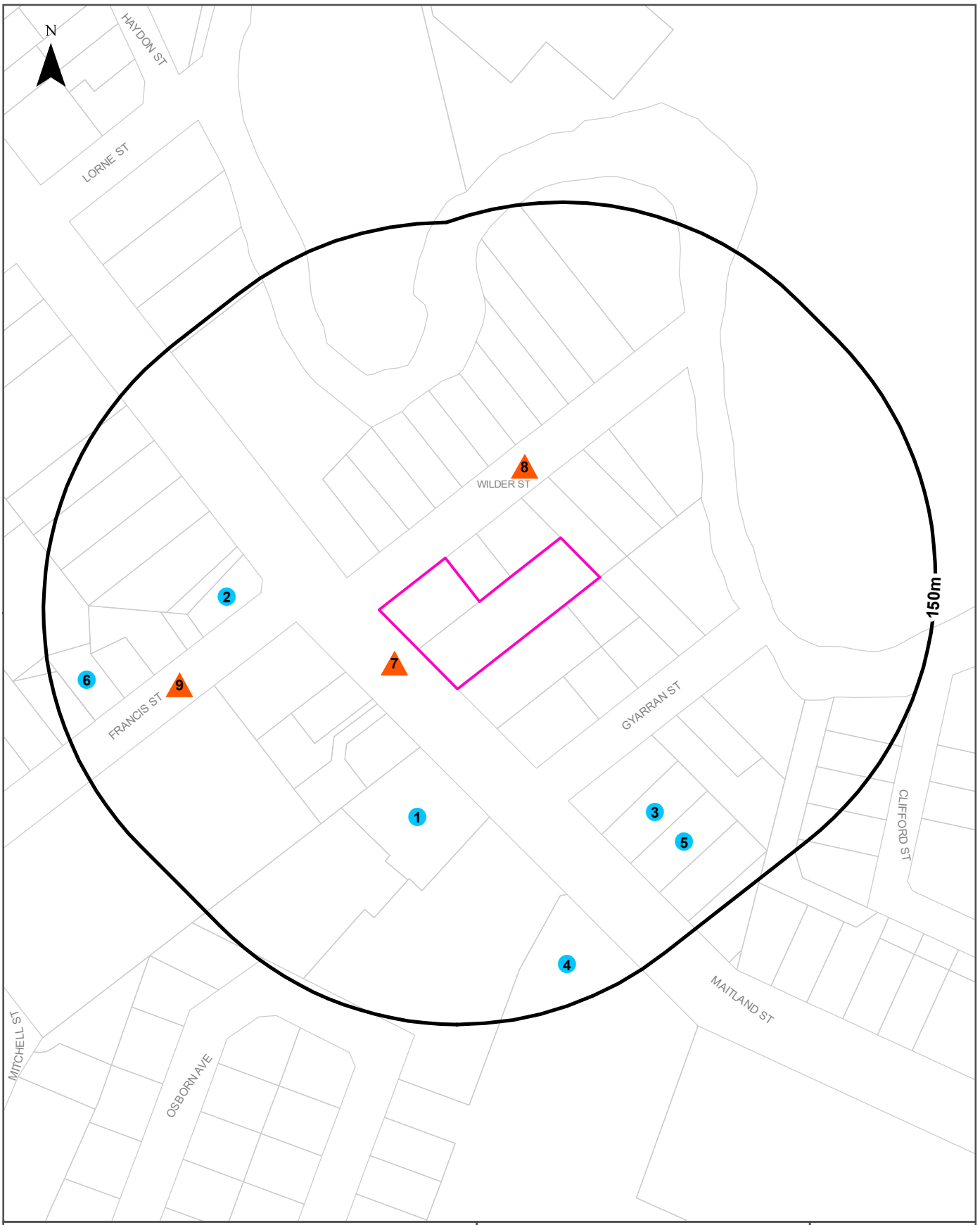
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

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	57m	North West
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	57m	North West
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	57m	North West
11677	UPPER HUNTER COUNTY COUNCIL	WATERS WITHIN UPPER HUNTER COUNTY COUNCIL, NEW ENGLAND HIGHWAY, MUSWELLBROOK	Surrendered	21/06/2002	Miscellaneous licensed discharge to waters (at any time)	Network of Features	57m	North West

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

36-38 Maitland Street, Muswellbrook, NSW 2333



Legend

- Site Boundary
- Buffer 150m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 30 60 90 120 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Historical Business Directories

36-38 Maitland Street, Muswellbrook, NSW 2333

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records 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
1	BATTERY MFRS. &/OR DISTS.	Beauerepairs For Tyres Pty Ltd., 49 Maitland St, Muswellbrook 2333	79674	1991	Premise Match	31m	South
	BATTERY SALES &/OR SERVICE.	Beaurepairs for Lyres Pty Ltd., 49 Maitland St, Muswellbrook 2333	79679	1991	Premise Match	31m	South
	TYRE &/OR TUBE MFRS. &/OR DISTS.	Beaurepairs for Tyres Pty Ltd., 49 Maitland St, Muswellbrook 2333	80482	1991	Premise Match	31m	South
	TYRE DEALERS &/OR RETREADERS &/OR VULCANISERS.	Beaurepairs for Tyres Pty Ltd., 49 Maitland St, Muswellbrook 2333	80483	1991	Premise Match	31m	South
	MOTOR GARAGES & SERVICE STATIONS.	Mobil Fast Food., 51 Maitland St, Muswellbrook 2333	80220	1991	Premise Match	31m	South
	TAKE-AWAY FOODS.	Mobil Fast Food., 51 Maitland St, Muswellbrook 2333	80445	1991	Premise Match	31m	South
	BUS OPERATORS,	Osborn Reg Pty Ltd., 51 Maitland St, Muswellbrook 2333	79726	1991	Premise Match	31m	South
	CARRIERS &/OR CARTAGE CONTRACTORS.	Osborn Reg Pty Ltd., 51 Maitland St, Muswellbrook 2333	79758	1991	Premise Match	31m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Goodwins Mobil Service Centre, 51 Maitland St., Muswellbrook 2333	169586	1982	Premise Match	31m	South
	MOTOR OIL &/OR SPIRIT DEPOTS.	Mobil Oil Australia Ltd., 51 Maitland St., Muswellbrook 2333	169603	1982	Premise Match	31m	South
	CARRIERS &/OR CARTAGE CONTRACTORS.	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169344	1982	Premise Match	31m	South
	ENGINEERS - GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169428	1982	Premise Match	31m	South
	MOTOR BUS SERVICES.	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169568	1982	Premise Match	31m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169592	1982	Premise Match	31m	South
	TYRE DEALERS, RETREADERS &/OR VULCANIZERS.	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169747	1982	Premise Match	31m	South
	WELDERS - ELECTRIC &/OR OXY.	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169769	1982	Premise Match	31m	South
	LAND DEVELOPERS.	rn Development Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169517	1982	Premise Match	31m	South
2	FRENCH POLISHERS	Kennedy, B. R., 43 Maitland St., Muswellbrook 2333	641238	1970	Premise Match	53m	West
	FURNITURE REPAIRERS & REMODELLERS	Kennedy, B. R., 43 Maitland St., Muswellbrook 2333	641248	1970	Premise Match	53m	West
	MOTOR TRIMMERS	Kennedy, B. R., 43 Maitland St., Muswellbrook 2333	641426	1970	Premise Match	53m	West
	UPHOLSTERERS	Kennedy, B. R., 43 Maitland St., Muswellbrook 2333	641541	1970	Premise Match	53m	West
3	CARRIERS & CARTAGE CONTRACTORS	George, A. T., 46 Maitland Rd. Muswellbrook	137339	1950	Premise Match	86m	South East
4	SCHOOLS &/OR COLLEGES-PRIVATE &/OR PUBLIC	Muswellbrook South Public School., 55 Maitland St, Muswellbrook 2333	80393	1991	Premise Match	103m	South
	SCHOOLS &/OR COLLEGES - PRIVATE &/OR PUBLIC.	Muswellbrook South Public School 55 Maitland St., Muswellbrook 2333	169691	1982	Premise Match	103m	South

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
5	MOTOR STEERING SPECIALISTS	Beaurepairs for Tyres Pty Ltd., 48 Maitland St, Muswellbrook 2333	80244	1991	Premise Match	105m	South East
	MOTOR WHEEL ALIGNING & BALANCING SERVICES.	Beaurepairs for Tyres Pty Ltd., 48 Maitland St, Muswellbrook 2333	80251	1991	Premise Match	105m	South East
	FURNITURE REMOVALISTS &/OR STORAGE.	Les King Removalist, 48 Maitland St., Muswellbrook 2333	169445	1982	Premise Match	105m	South East
	CARRIERS & CARTAGE CONTRACTORS	King, L., 48 Maitland St, Muswellbrook 2333	641163	1970	Premise Match	105m	South East
6	LOCAL BODIES.	er Valley Artificial Stock Breeding Service, 5 Francis St., Muswellbrook 2333	169528	1982	Premise Match	120m	West

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records 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:

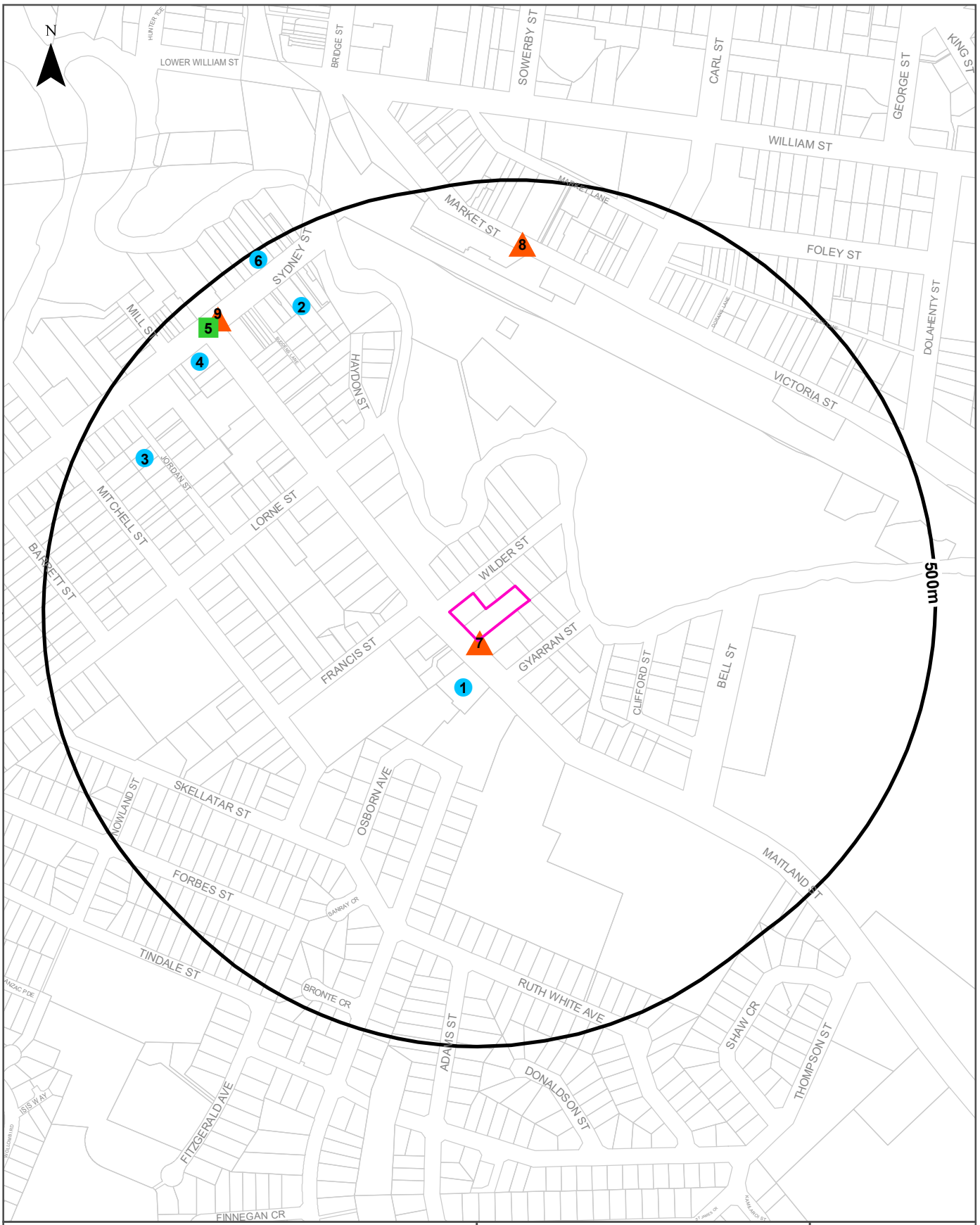
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
7	ASSOCIATIONS &/OR SOCIETIES	Basketball Association., Maitland St, Muswellbrook 2333	79634	1991	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES	Muswellbrook Squash Club., Maitland Rd, Muswellbrook 2333	79629	1991	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES	Upper Hunter Pastoral & Agricultural Assoc., Maitland St, Muswellbrook 2333	79646	1991	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES	Upper Hunter Trolling Club., Maitland St, Muswellbrook 2333	79647	1991	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES.	Basketball Association, Maitland St., Muswellbrook 2333	169232	1982	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES.	Muswellbrook Squash Club, Maitland Rd., Muswellbrook 2333	169245	1982	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES.	Upper Hunter Pastoral & Agricultural Assoc., Maitland St., Muswellbrook 2333	169260	1982	Road Match	0m
	ASSOCIATIONS &/OR SOCIETIES.	Upper Hunter Trotting Club, Maitland St., Muswellbrook 2333	169261	1982	Road Match	0m
	MOTOR CAR & TRUCKS DEALERS-NEW & USED	Arnull's Auto Service, Maitland St., Muswellbrook 2333	641378	1970	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Arnull's Auto Service, Maitland St., Muswellbrook 2333	641387	1970	Road Match	0m
	MOTOR PAINTERS & PANEL BEATERS	Arnull's Auto Service, Maitland St., Muswellbrook 2333	641412	1970	Road Match	0m
	MOTOR TOWING SERVICES	Arnull's Auto Service, Maitland St., Muswellbrook 2333	641422	1970	Road Match	0m
	WELDERS-ELECTRIC &/OR OXY	Arnull's Auto Service, Maitland St., Muswellbrook 2333	641551	1970	Road Match	0m
	CRANES-MOBILE-PROPRIETORS &/OR HIRERS	Cox & Hazell Pty. Ltd., Maitland St., Muswellbrook 2333	641177	1970	Road Match	0m
	EARTH MOVING MACHINERY HIRERS	Cox & Hazell Pty. Ltd., Maitland St., Muswellbrook 2333	641204	1970	Road Match	0m
	HAULAGE CONTRACTORS	Cox & Hazell Pty. Ltd., Maitland St., Muswellbrook 2333	641285	1970	Road Match	0m
	CAFES, TEA ROOMS & COFFEE LOUNGES	Esso Service Station, Maitland St., Muswellbrook 2333	641140	1970	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Esso Service Station, Maitland St., Muswellbrook 2333	641419	1970	Road Match	0m
	NURSERYMEN	Forestry Commission Nursery, Maitland St., Muswellbrook 2333	641435	1970	Road Match	0m
	CAMPING GROUNDS & CARAVAN PARKS	Hillside Caravan Park, Maitland St., Muswellbrook 2333	641150	1970	Road Match	0m
	MOTOR OIL & SPIRIT DEPOTS	Mobiloil Australia Ltd., Maitland St., Muswellbrook 2333	641406	1970	Road Match	0m
	SCHOOLS & COLLEGES-PRIVATE & PUBLIC	Muswellbrook South Public School, Maitland St., Muswellbrook 2333	641493	1970	Road Match	0m
	CARRIERS & CARTAGE CONTRACTORS	Osborn, R. Pty. Ltd., Maitland Rd., Muswellbrook 2333	641164	1970	Road Match	0m
	ENGINEERS-GENERAL, MFRG. & MECHANICAL	Osborn, R. Pty. Ltd., Maitland Rd., Muswellbrook 2333	641224	1970	Road Match	0m
	MOTOR BUS SERVICE	Osborn, R. Pty. Ltd., Maitland Rd., Muswellbrook 2333	641376	1970	Road Match	0m
	ROAD TRANSPORT SERVICES-N.S.W.	Osborn, R. Pty. Ltd., Maitland Rd., Muswellbrook 2333	641487	1970	Road Match	0m
	WELDERS-ELECTRIC &/OR OXY	Osborn, R. Pty. Ltd., Maitland Rd., Muswellbrook 2333	641557	1970	Road Match	0m
	TYRE DEALERS, RETREADERS & VULCANISERS	Osborn, R. Pty. Ltd., Maitland St., Muswellbrook 2333	641538	1970	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
7	LAND DEVELOPERS	Osborne Development Pty. Ltd., Maitland St., Muswellbrook 2333	641320	1970	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Osborne, R. Pty. Ltd., Maitland St., Muswellbrook 2333	641394	1970	Road Match	0m
	ELECTRICAL CONTRACTORS-LICENSED	Upper Hunter County Council, Market St, Muswellbrook 2333	641210	1970	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Watson, R. & N. J., Maitland Rd., Muswellbrook 2333	641401	1970	Road Match	0m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Watson, R. & N. J., Maitland St., Muswellbrook 2333	641374	1970	Road Match	0m
	MOTOR CAR & TRUCKS DEALERS-NEW & USED	Watson, R. & N. J., Maitland St., Muswellbrook 2333	641384	1970	Road Match	0m
	CAFES, TEA ROOMS, COFFEE LOUNGES, ETC.	Atlantic Service Station, Maitland St., Muswellbrook	165284	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Atlantic Service Station, Maitland St., Muswellbrook	165560	1961	Road Match	0m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Auto Service, Maitland St., Muswellbrook	165506	1961	Road Match	0m
	MOTOR BODY BUILDERS &/OR REPAIRERS	Auto Service, Maitland St., Muswellbrook	165510	1961	Road Match	0m
	MOTOR CAR & TRUCKS DEALERS-NEW & USED	Auto Service, Maitland St., Muswellbrook	165512	1961	Road Match	0m
	MOTOR ELECTRICIANS	Auto Service, Maitland St., Muswellbrook	165525	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Auto Service, Maitland St., Muswellbrook	165526	1961	Road Match	0m
	MOTOR PAINTERS & PANEL BEATERS	Auto Service, Maitland St., Muswellbrook	165554	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Auto Service, Maitland St., Muswellbrook	165561	1961	Road Match	0m
	WELDERS-ELECTRIC &/OR OXY	Auto Service, Maitland St., Muswellbrook	165661	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Hogan, B., Maitland St., Muswellbrook	165532	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Hogan, B., Maitland St., Muswellbrook	165563	1961	Road Match	0m
	NURSERYMEN	King's Nursery, Maitland St., Muswellbrook	165576	1961	Road Match	0m
	MOTOR WRECKERS	Morris, L., Maitland Rd., Muswellbrook	165570	1961	Road Match	0m
	MOTOR PAINTERS & PANEL BEATERS	Morris, L., Maitland St., Muswellbrook	165558	1961	Road Match	0m
	WELDERS-ELECTRIC &/OR OXY	Morris, L., Maitland St., Muswellbrook	165668	1961	Road Match	0m
	CARRIERS & CARTAGE CONTRACTORS	Osborne, R., Maitland St., Muswellbrook	165309	1961	Road Match	0m
	ENGINEERS-GENERAL, MFRG. & MECHANICAL	Osborne, R., Maitland St., Muswellbrook	165367	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Osborne, R., Maitland St., Muswellbrook	165538	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Osborne, R., Maitland St., Muswellbrook	165566	1961	Road Match	0m
	TYRE DEALERS, RETREADERS & VULCANISERS	Osborne, R., Maitland St., Muswellbrook	165657	1961	Road Match	0m
	ROAD TRANSPORT SERVICES-N.S.W.	Osborne, Reg, Maitland St., Muswellbrook	165609	1961	Road Match	0m
	AGRICULTURAL MACHINERY DEALERS	Sleep, Bower and Robb, Maitland St., Muswellbrook	165224	1961	Road Match	0m
	INSURANCE AGENTS	Sleep, Bower and Robb, Maitland St., Muswellbrook	165454	1961	Road Match	0m
	MOTOR CAR & TRUCKS DEALERS-NEW & USED	Sleep, Bower and Robb, Maitland St., Muswellbrook	165522	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Sleep, Bower and Robb, Maitland St., Muswellbrook	165539	1961	Road Match	0m
8	PLUMBERS, GASFITTERS & DRAINLAYERS	Bowen, J. E., Wilder St., Muswellbrook 2333	641459	1970	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
9	FURNITURE REPAIRERS & REMODELLERS	Kennedy, B. R., Francis St., Muswellbrook	165403	1961	Road Match	37m
	MOTOR TRIMMERS	Kennedy, B. R., Francis St., Muswellbrook	165569	1961	Road Match	37m
	UPHOLSTERERS	Kennedy, B. R., Francis St., Muswellbrook	165659	1961	Road Match	37m

Dry Cleaners, Motor Garages & Service Stations

36-38 Maitland Street, Muswellbrook, NSW 2333



Legend

- Site Boundary
- Buffer 500m
- Property Boundary
- Business directory records mapped to a specific premise
- Business directory records mapped to a road intersection
- Business directory records mapped to a road corridor
- Business directory records mapped to a general area

Scale: 0 90 180 270 360 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Historical Business Directories

36-38 Maitland Street, Muswellbrook, NSW 2333

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
1	MOTOR GARAGES & SERVICE STATIONS.	Mobil Fast Food., 51 Maitland St, Muswellbrook 2333	80220	1991	Premise Match	31m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Goodwins Mobil Service Centre, 51 Maitland St., Muswellbrook 2333	169586	1982	Premise Match	31m	South
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Osborn, R. Pty. Ltd., 51 Maitland St., Muswellbrook 2333	169592	1982	Premise Match	31m	South
2	MOTOR GARAGES & SERVICE STATIONS.	Caltex Subway Garage (Muswellbrook) Pty Ltd., 16 Sydney St, Muswellbrook 2333	80214	1991	Premise Match	374m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Subway Garage (Muswellbrook) Pty. Ltd., 16 Sydney St., Muswellbrook 2333	169595	1982	Premise Match	374m	North West
	MOTOR GARAGES & ENGINEERS	Subway Garage (Muswellbrook) Pty. Ltd., 16 Sydney St., Muswellbrook 2333	641399	1970	Premise Match	374m	North West
	MOTOR GARAGES & ENGINEERS	Subway Garage (Muswellbrook) Pty. Limited., 16 Sydney St., Muswellbrook	165540	1961	Premise Match	374m	North West
	MOTOR GARAGES & ENGINEERS	Subway Garage (The), 16 Sydney St. Muswellbrook	137531	1950	Premise Match	374m	North West
	MOTOR SERVICE STATIONS	Subway Garage (The), 16 Sydney St. Muswellbrook	137554	1950	Premise Match	374m	North West
3	DRY CLEANERS, PRESSERS & DYERS	Upper Hunter Dry Cleaners Pty. Ltd., 3 Jordan St., Muswellbrook 2333	641203	1970	Premise Match	407m	North West
4	MOTOR GARAGES & SERVICE STATIONS.	BP Brook Service Station., 1 Maitland St, Muswellbrook 2333	80212	1991	Premise Match	421m	North West
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	BP Brook Service Station, 1 Maitland St., Muswellbrook 2333	169581	1982	Premise Match	421m	North West
5	MOTOR GARAGES & ENGINEERS	Sleep and Bower, Cnr. New England Highway. And Sydney St. Muswellbrook	137530	1950	Road Intersection	459m	North West
	MOTOR SERVICE STATIONS	Sleep and Bower., Cnr. New England Highway and Sydney St., Muswellbrook	137553	1950	Road Intersection	459m	North West
6	DRY CLEANERS & PRESSERS	Holdsworths Dry Cleaners, 13 Sydney St., Muswellbrook 2333	169403	1982	Premise Match	478m	North West
	DRY CLEANERS, PRESSERS & DYERS	Holdsworth's Dry Cleaners 13 Sydney Street, Muswellbrook	641188	1970	Premise Match	478m	North West
	DRY CLEANERS, PRESSERS & DYERS	Holdsworths Dry Cleaners, 13 Sydney St., Muswellbrook 2333	641202	1970	Premise Match	478m	North West
	DRY CLEANERS, PRESSERS & DYERS	Holdsworths Dry Cleaners, 13 Sydney St., Muswellbrook	165343	1961	Premise Match	478m	North West

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
7	MOTOR GARAGES & ENGINEERS	Arnull's Auto Service, Maitland St., Muswellbrook 2333	641387	1970	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Esso Service Station, Maitland St., Muswellbrook 2333	641419	1970	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Osborne, R. Pty. Ltd., Maitland St., Muswellbrook 2333	641394	1970	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Watson, R. & N. J., Maitland Rd., Muswellbrook 2333	641401	1970	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Atlantic Service Station, Maitland St., Muswellbrook	165560	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Auto Service, Maitland St., Muswellbrook	165526	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Auto Service, Maitland St., Muswellbrook	165561	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Hogan, B., Maitland St., Muswellbrook	165532	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Hogan, B., Maitland St., Muswellbrook	165563	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Osborne, R., Maitland St., Muswellbrook	165538	1961	Road Match	0m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Osborne, R., Maitland St., Muswellbrook	165566	1961	Road Match	0m
	MOTOR GARAGES & ENGINEERS	Sleep, Bower and Robb, Maitland St., Muswellbrook	165539	1961	Road Match	0m
8	MOTOR GARAGES & ENGINEERS	Horneroy Bros., Market St., Muswellbrook	165533	1961	Road Match	369m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Horneroy Bros., Market St., Muswellbrook	165564	1961	Road Match	369m
	MOTOR GARAGES & ENGINEERS	Horneroy Bros., Market St. Muswellbrook	137526	1950	Road Match	369m
	MOTOR SERVICE STATIONS	Horneroy Bros., Market St. Muswellbrook	137551	1950	Road Match	369m
9	MOTOR GARAGES & ENGINEERS	Bower, C. W., Sydney St., Muswellbrook	165527	1961	Road Match	445m
	MOTOR GARAGES & ENGINEERS	Bower, C. W., Sydney St. Muswellbrook	137524	1950	Road Match	445m

Aerial Imagery 2022

36-38 Maitland Street, Muswellbrook, NSW 2333

Aerial Imagery 2017

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale: 0 25 50 75 100 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 January 2023

Aerial Imagery 2013

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale: 0 25 50 75 100 Meters

Data Source Aerial Imagery: © 2023 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Aerial Imagery 2008

36-38 Maitland Street, Muswellbrook, NSW 2333

Aerial Imagery 1998

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 19 January 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1993

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 19 January 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1989

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 19 January 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

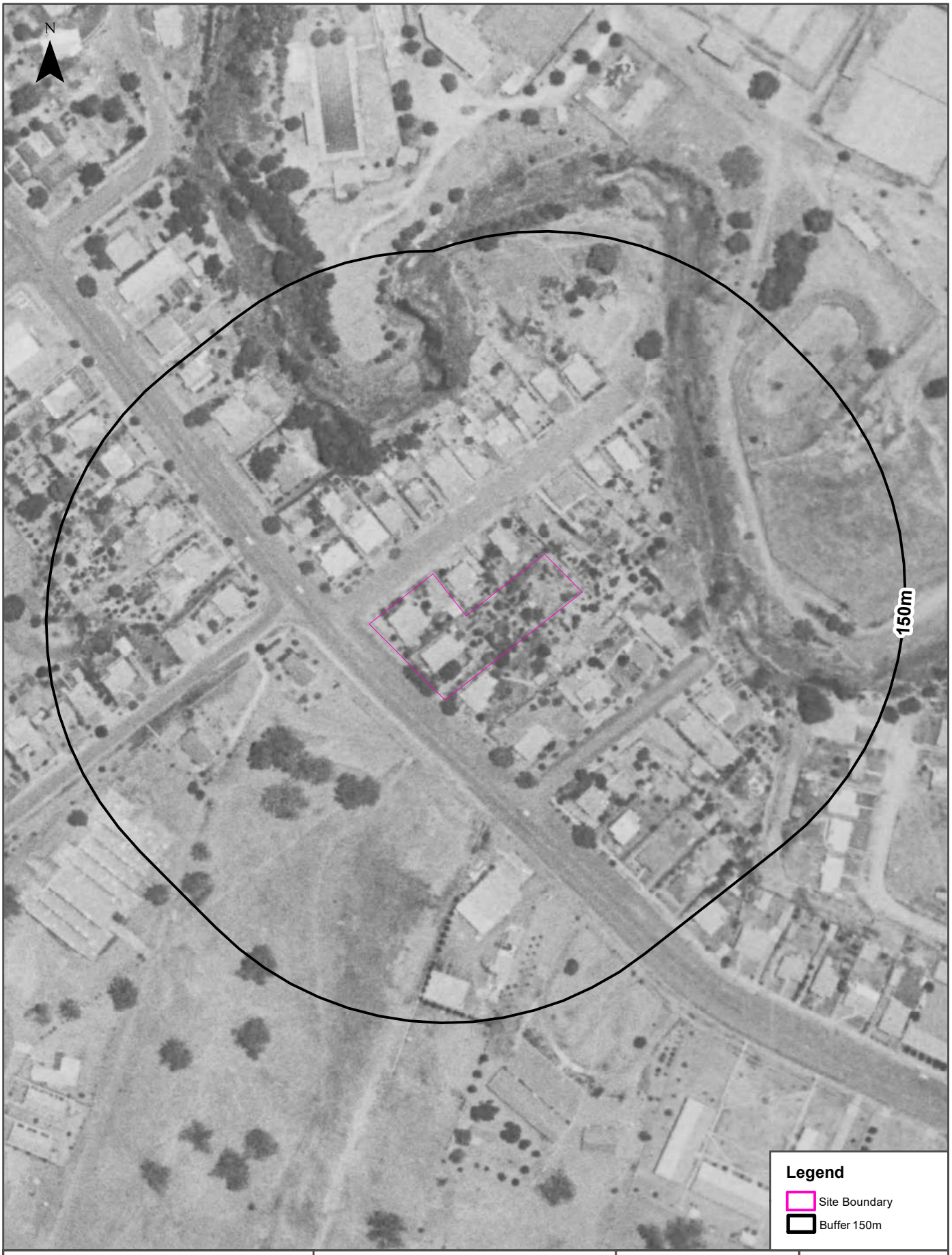
Aerial Imagery 1974

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 19 January 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1967

36-38 Maitland Street, Muswellbrook, NSW 2333



Aerial Imagery 1958

36-38 Maitland Street, Muswellbrook, NSW 2333

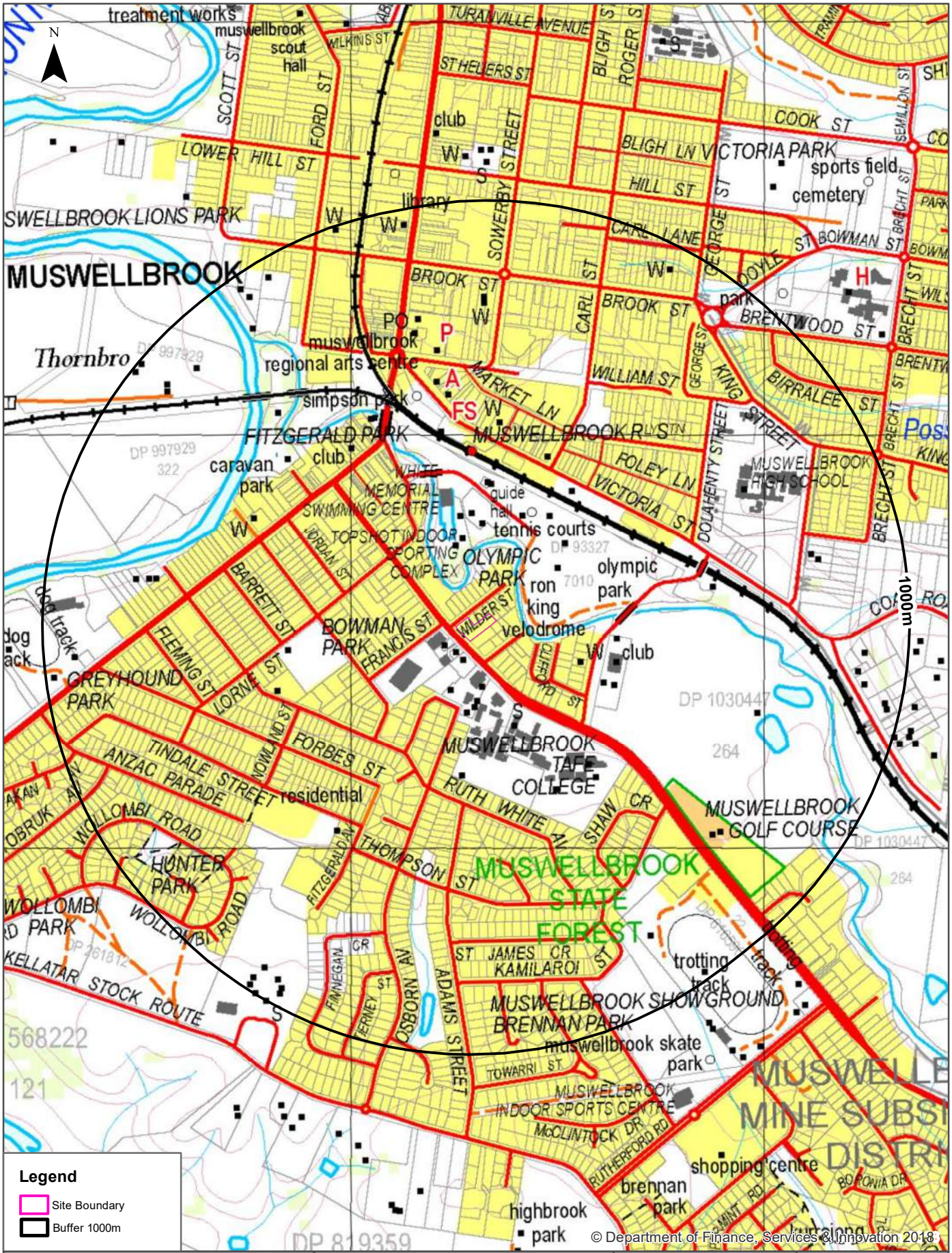
Aerial Imagery 1938

36-38 Maitland Street, Muswellbrook, NSW 2333

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 19 January 2023
0 25 50 75 100 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Topographic Map 2015

36-38 Maitland Street, Muswellbrook, NSW 2333



Legend

- Site Boundary
- Buffer 1000m

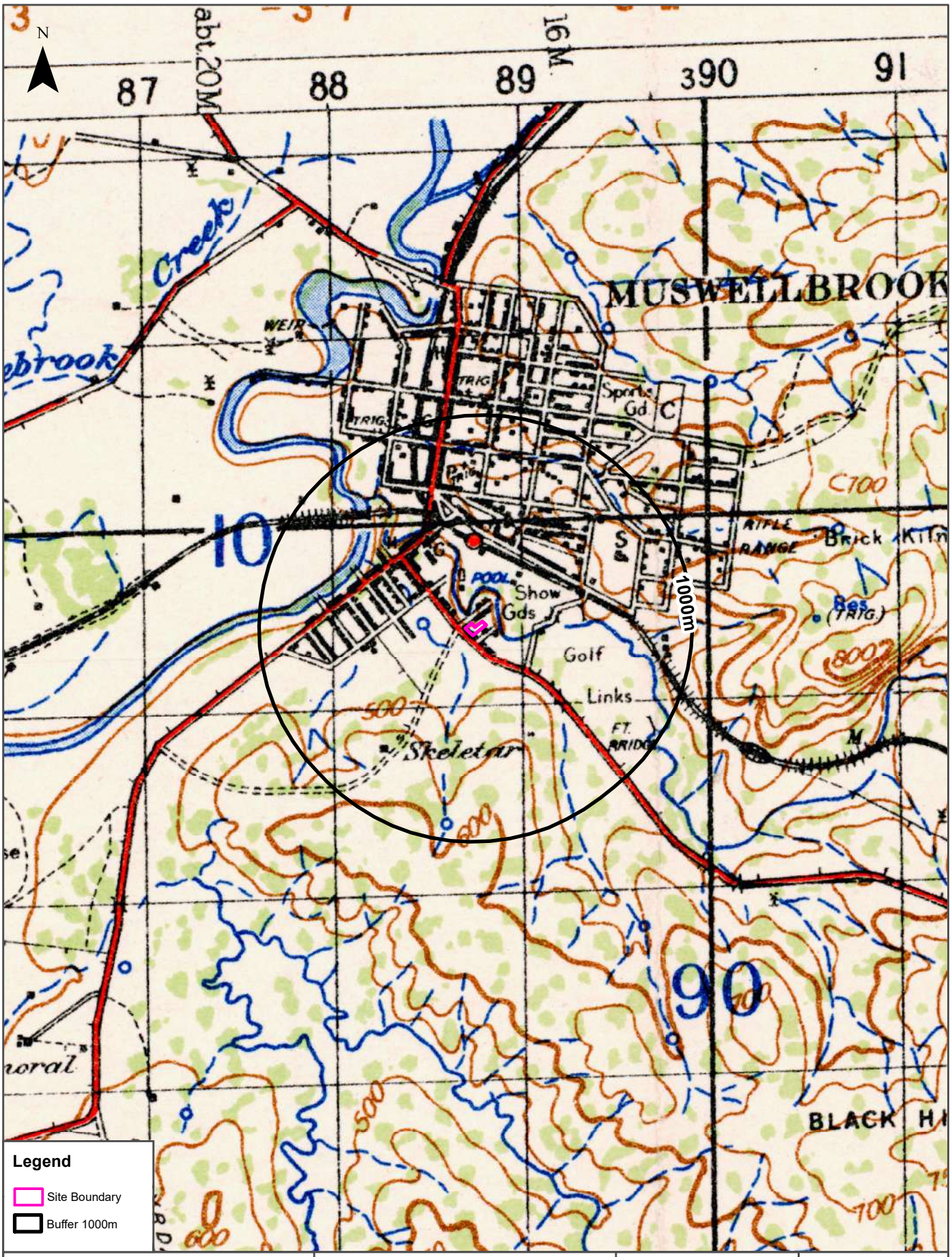
Scale: 0 140 280 Meters 420 560	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 January 2023

Historical Map 1978

36-38 Maitland Street, Muswellbrook, NSW 2333

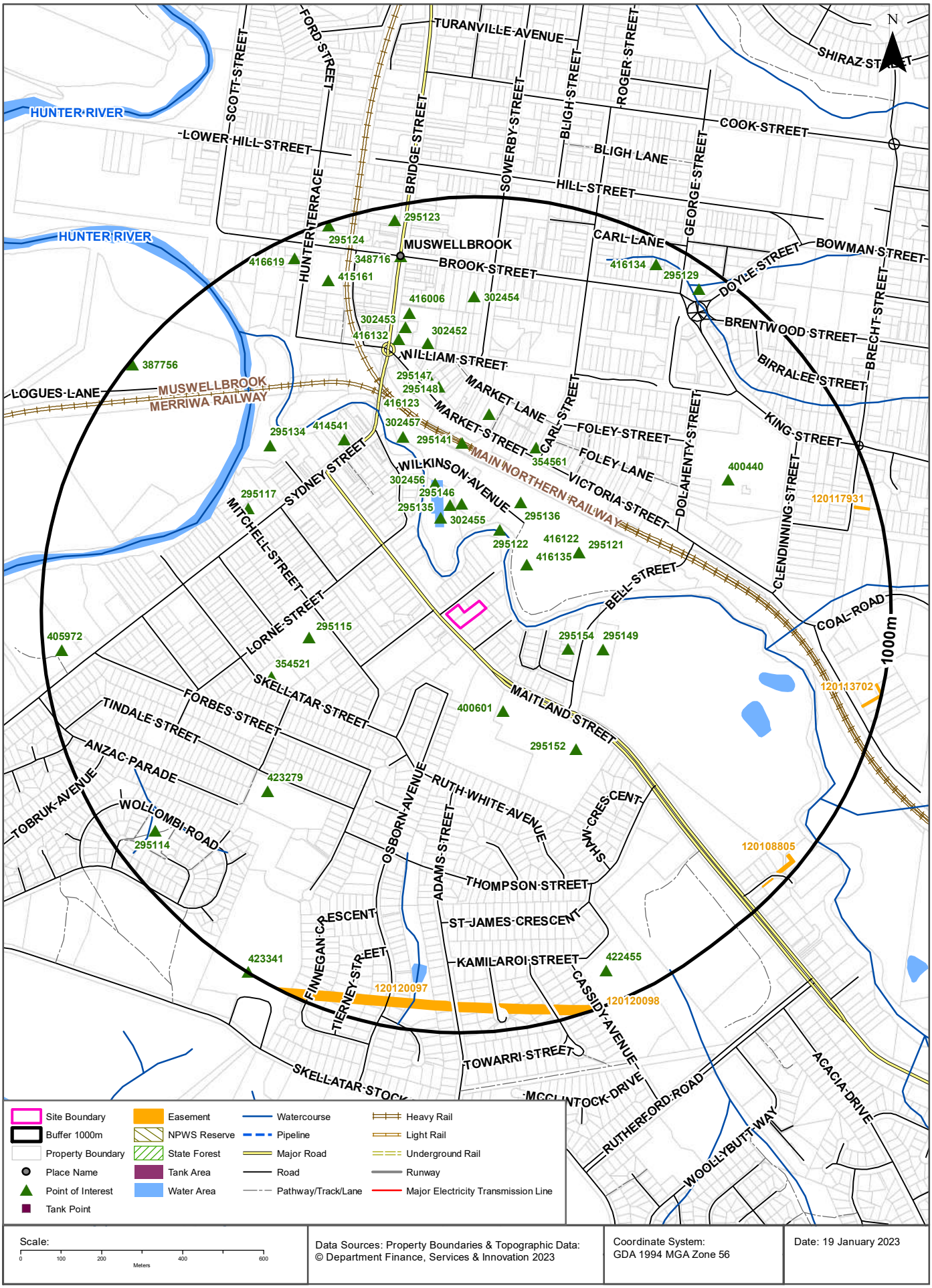
Historical Map c.1941

36-38 Maitland Street, Muswellbrook, NSW 2333



Topographic Features

36-38 Maitland Street, Muswellbrook, NSW 2333



Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Topographic Features

36-38 Maitland Street, Muswellbrook, NSW 2333

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
416135	Cycling Track	RON KING VELODROME	147m	North East
295122	Park	OLYMPIC PARK	185m	North
295135	Swimming Pool	Swimming Pool	219m	North
295154	Place Of Worship	SEVENTH DAY ADVENTIST CHURCH	226m	East
400601	Primary School	MUSWELLBROOK SOUTH PUBLIC SCHOOL	229m	South
295146	Community Facility	MUSWELLBROOK RSL BOWLING CLUB	246m	North
302455	Sports Centre	TOPSHOT INDOOR SPORTING COMPLEX	247m	North
295136	Sports Court	TENNIS COURTS	265m	North East
416122	Park	OLYMPIC PARK	269m	North East
295121	Sports Field	Sports Field	269m	North East
302456	Sports Centre	WHITE MEMORIAL SWIMMING CENTRE	305m	North
295149	Club	MUSWELLBROOK GOLF CLUB	306m	East
295115	Park	BOWMAN PARK	343m	West
295141	Railway Station	MUSWELLBROOK RAILWAY STATION	395m	North
354561	Community Facility	MUSWELLBROOK PCYC	406m	North East
295152	TAFE College	MUSWELLBROOK TAFE COLLEGE	410m	South East
302457	Park	FITZGERALD PARK	438m	North
354521	Community Facility	BOWMAN PARK COMMUNITY CENTRE	459m	West
416133	Place Of Worship	CHRISTIAN FAMILY CENTRE	464m	North
414541	Club	MUSWELLBROOK AND DISTRICT WORKERS CLUB	497m	North West
295147	Fire Station	MUSWELLBROOK FIRE STATION	540m	North
416123	Picnic Area	SIMPSON PARK	549m	North
295117	Place Of Worship	BAPTIST CHURCH	555m	North West
295148	Ambulance Station	MUSWELLBROOK AMBULANCE STATION	575m	North
295134	Tourist Park / Home Village	RIVERSIDE CABIN AND VAN PARK	603m	North West
423279	Nursing Home	MOUNT PROVIDENCE VILLIAGE	621m	South West
302452	Police Station	MUSWELLBROOK POLICE STATION	650m	North
416132	Art Gallery	MUSWELLBROOK REGIONAL ARTS CENTRE	672m	North
400440	High School	MUSWELLBROOK HIGH SCHOOL	678m	North East
302453	Post Office	MUSWELLBROOK POST OFFICE	699m	North
416006	Community Facility	MUSWELLBROOK COURT HOUSE	733m	North

Map Id	Feature Type	Label	Distance	Direction
302454	Place Of Worship	CATHOLIC CHURCH	753m	North
415161	Retirement Village	VERLIE WEIDMANN VILLAGE	864m	North
348716	Town	MUSWELLBROOK	874m	North
295114	Park	HUNTER PARK	896m	South West
422455	Nursing Home	CALVARY MUSWELLBROOK RETIREMENT COMMUNITY	919m	South
416134	Place Of Worship	CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS	941m	North East
295129	Park	Park	944m	North East
416619	Retirement Village	RENE WEIDMANN VILLAGE	948m	North West
405972	Park	GREYHOUND PARK	953m	West
295123	Place Of Worship	UNITING CHURCH	964m	North
387756	Homestead	THORNBRO	991m	North West
295124	Place Of Worship	ANGLICAN CHURCH	992m	North
423341	Special School	ASPECT HUNTER SCHOOL MUSWELLBROOK SATELLITE	999m	South West

Topographic Features

36-38 Maitland Street, Muswellbrook, NSW 2333

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
N/A	No records in buffer					

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
120120097	Primary	Undefined		923m	South
120117931	Primary	Undefined		943m	East
120113702	Primary	Undefined		959m	East
120108805	Primary	Undefined		963m	South East
120120098	Primary	Undefined		999m	South

Topographic Features

36-38 Maitland Street, Muswellbrook, NSW 2333

State Forest

What State Forest exist within the dataset buffer?

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

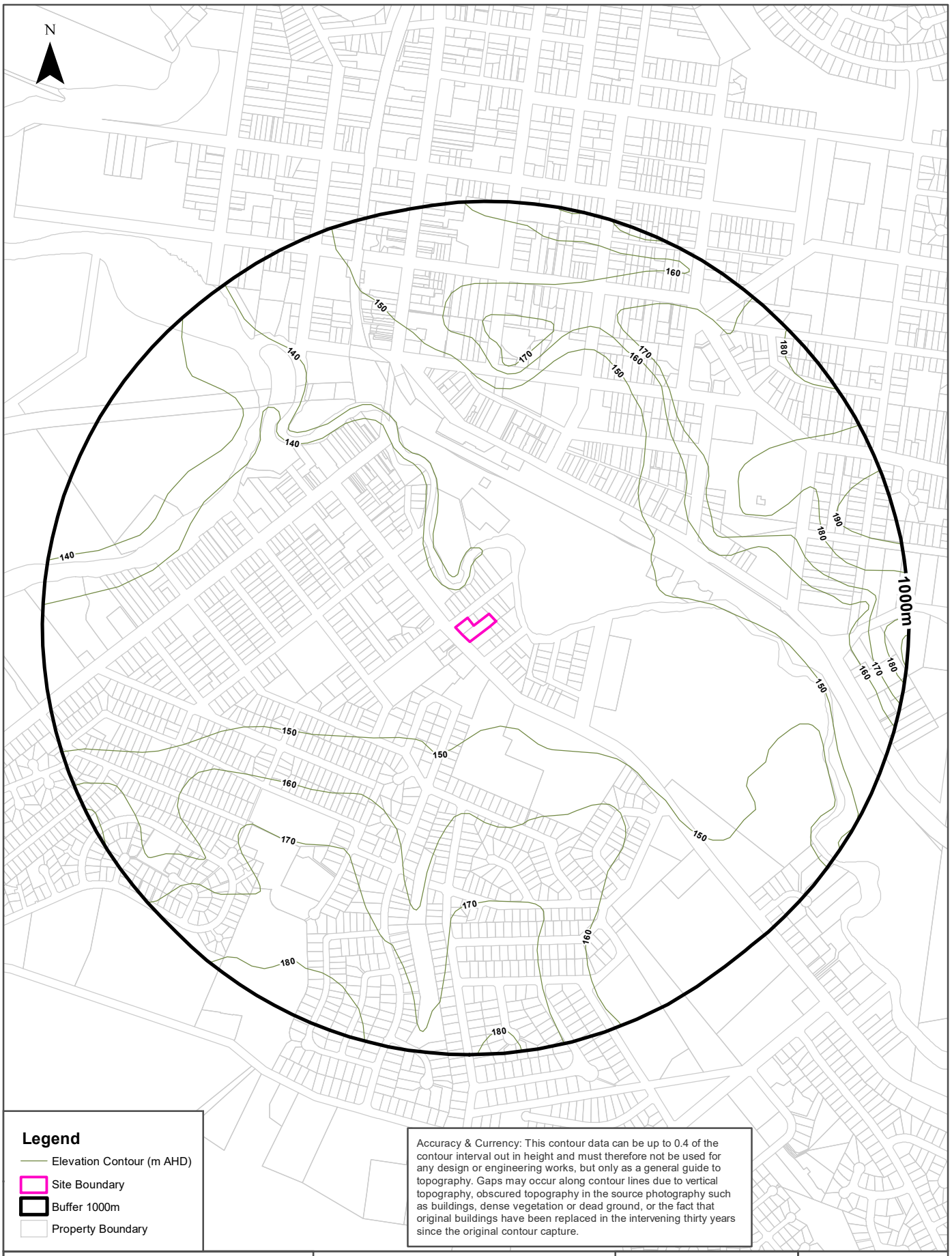
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

Elevation Contours (m AHD)

36-38 Maitland Street, Muswellbrook, NSW 2333



Hydrogeology & Groundwater

36-38 Maitland Street, Muswellbrook, NSW 2333

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site

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

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

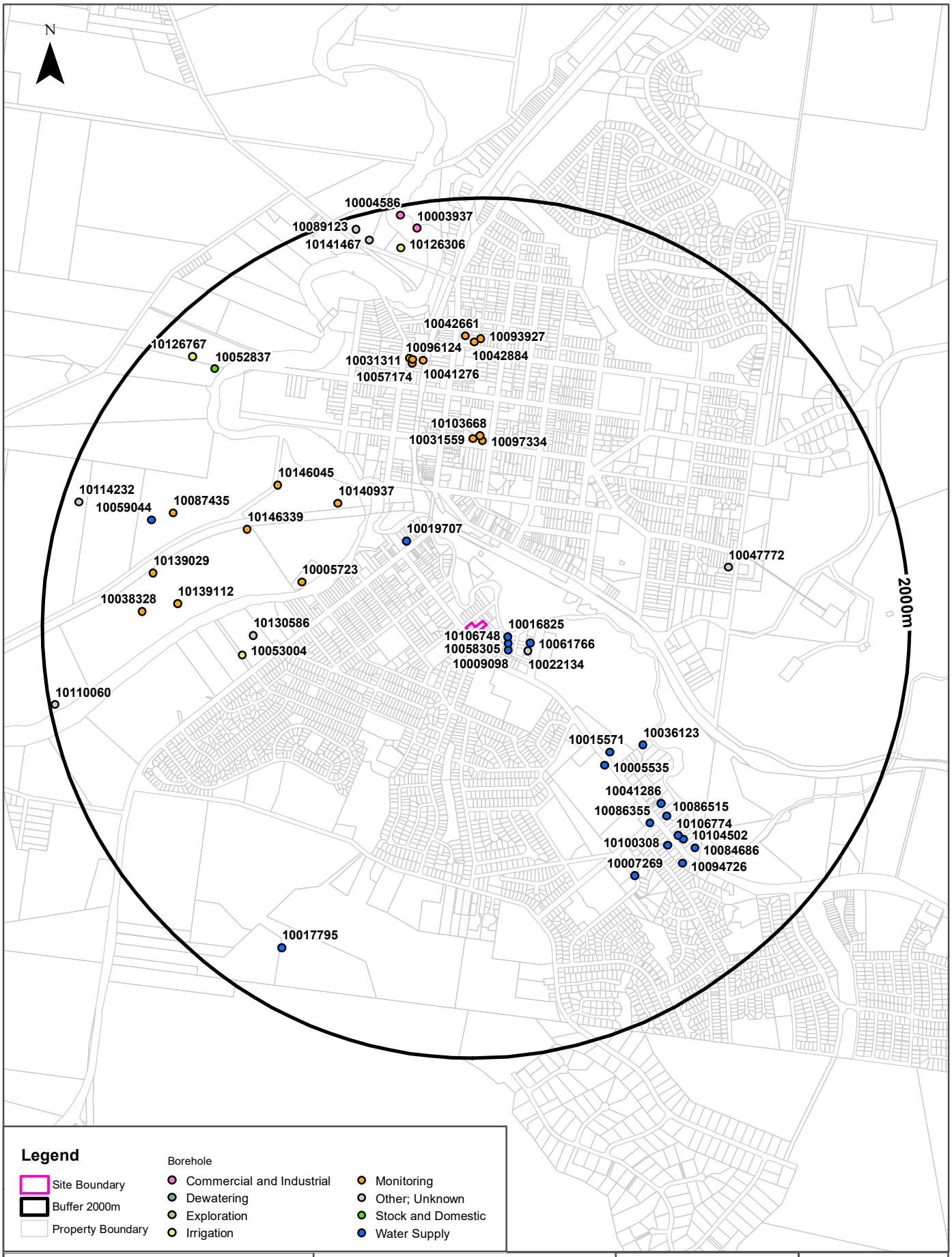
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

36-38 Maitland Street, Muswellbrook, NSW 2333



Legend

Site Boundary
Buffer 2000m
Property Boundary

Borehole

- Commercial and Industrial
- Dewatering
- Exploration
- Irrigation
- Monitoring
- Other; Unknown
- Stock and Domestic
- Water Supply

Scale: 0 100 200 400 600 800 1,000 1,200 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Hydrogeology & Groundwater

36-38 Maitland Street, Muswellbrook, NSW 2333

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
10016825	GW026568	Water Supply	Unknown	01/01/1967	7.60		AHD				119m	East
10106748	GW024568	Water Supply	Unknown	01/08/1965	6.10		AHD				119m	East
10058305	GW028513	Water Supply	Unknown	01/06/1965	1.20		AHD				137m	South East
10009098	GW028514	Water Supply	Unknown	01/06/1965	1.20		AHD				159m	South East
10061766	GW034088	Water Supply	Unknown	01/06/1971	7.30		AHD				226m	East
10022134	GW022531	Unknown	Removed	01/01/1965	6.10		AHD				234m	South East
10019707	GW061090	Water Supply	Unknown	01/07/1985	18.30		AHD	1001-3000 ppm			493m	North West
10005723	GW079785	Monitoring	Unknown	22/04/1992	13.20	143.65	AHD				801m	West
10015571	GW035339	Water Supply	Unknown	01/08/1972	9.10		AHD				841m	South East
10140937	GW079783	Monitoring	Unknown	22/04/1992	11.20	144.35	AHD				841m	North West
10097334	GW200845	Monitoring	Functional	06/10/2009	4.20		AHD			2.00	851m	North
10031559	GW200843	Monitoring	Functional	06/10/2009	4.20		AHD			2.00	861m	North
10005535	GW035928	Water Supply	Unknown	01/02/1973			AHD				870m	South East
10103668	GW200844	Monitoring	Functional	06/10/2009	4.20		AHD			2.00	875m	North
10036123	GW032743	Water Supply	Unknown	01/04/1968	5.70		AHD				935m	South East
10130586	GW037888	Other	Unknown	01/06/1971	11.50		AHD				1003m	West
10053004	GW053490	Irrigation	Unknown	01/10/1981	6.70		AHD				1061m	West
10146045	GW079782	Monitoring	Non-functional	01/04/1992	13.00	144.87	AHD				1113m	North West
10146339	GW079786	Monitoring	Abandoned	23/04/1992	12.00	143.42	AHD				1132m	North West
10047772	GW004900	Unknown	Unknown	01/01/1912	57.90		AHD				1175m	East
10041286	GW022230	Water Supply	Removed	01/01/1965	6.70		AHD				1182m	South East
10086355	GW044696	Water Supply	Unknown	01/07/1975	7.30		AHD				1218m	South East
10086515	GW032825	Water Supply	Unknown		6.00		AHD				1245m	South East
10057174	GW200780	Monitoring	Unknown	12/05/2010	12.00		AHD			10.20	1258m	North
10041276	GW200779	Monitoring	Unknown	12/05/2006	11.50		AHD			9.00	1261m	North
10096124	GW200781	Monitoring	Unknown	12/05/2006	13.00		AHD			9.80	1274m	North
10031311	GW200783	Monitoring	Unknown	12/05/2006	12.50		AHD		9.600	9.60	1283m	North
10042884	GW202485	Monitoring	Functional	07/09/2012	7.50		AHD		0.010	3.90	1318m	North
10093927	GW202484	Monitoring	Functional	06/09/2012	7.50		AHD		0.010	5.80	1333m	North
10042661	GW202486	Monitoring	Functional	07/09/2012	10.00		AHD		0.020	5.20	1348m	North

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
10106774	GW029528	Water Supply	Abandoned	01/05/1967	6.40		AHD				1349m	South East
10100308	GW034580	Water Supply	Removed		9.10		AHD				1352m	South East
10139112	GW079784	Monitoring	Functioning	22/04/1992	13.80	143.74	AHD				1364m	West
10007269	GW022229	Water Supply	Unknown	01/08/1963	10.10		AHD				1370m	South East
10104502	GW043852	Water Supply	Removed	01/05/1967	6.00		AHD				1378m	South East
10084686	GW022043	Water Supply	Unknown	01/08/1964			AHD				1447m	South East
10094726	GW023484	Water Supply	Abandoned	01/01/1965	7.60		AHD				1462m	South East
10087435	GW079781	Monitoring	Non-functional	21/04/1992	12.00	143.71	AHD				1482m	West
10139029	GW079787	Monitoring	Unknown	24/04/1992	12.50	142.39	AHD				1498m	West
10038328	GW079788	Monitoring	Non-functional	24/04/1992	14.00	141.85	AHD				1530m	West
10059044	GW078185	Water Supply	Functioning	29/03/1995	15.60		AHD	Fair	0.900	9.00	1569m	West
10052837	GW060025	Stock and Domestic	Removed	01/03/1983	7.00		AHD			3.50	1702m	North West
10017795	GW052759	Water Supply	Removed	01/01/1979	4.60		AHD				1732m	South West
10126306	GW037964	Irrigation	Unknown		12.40	145.23	AHD				1803m	North
10126767	GW060024	Irrigation	Unknown	01/09/1983	13.00		AHD	0-500 ppm			1819m	North West
10141467	GW200004	Unknown	Unknown	04/05/1991	19.00		AHD	Good	0.750	5.70	1872m	North
10003937	GW011536	Commercial and Industrial	Unknown	01/05/1955	12.50		AHD	Hard			1882m	North
10114232	GW015881	Unknown	Unknown	01/04/1957	11.00		AHD	Good			1920m	West
10089123	GW033609	Unknown	Functioning	01/01/1971	12.20		AHD				1938m	North
10004586	GW011537	Commercial and Industrial	Unknown	01/07/1955	12.80		AHD	Hard			1955m	North
10110060	GW015884	Unknown	Unknown	01/01/1956	11.00		AHD	Good			1972m	West

Hydrogeology & Groundwater

36-38 Maitland Street, Muswellbrook, NSW 2333

Driller's Logs

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

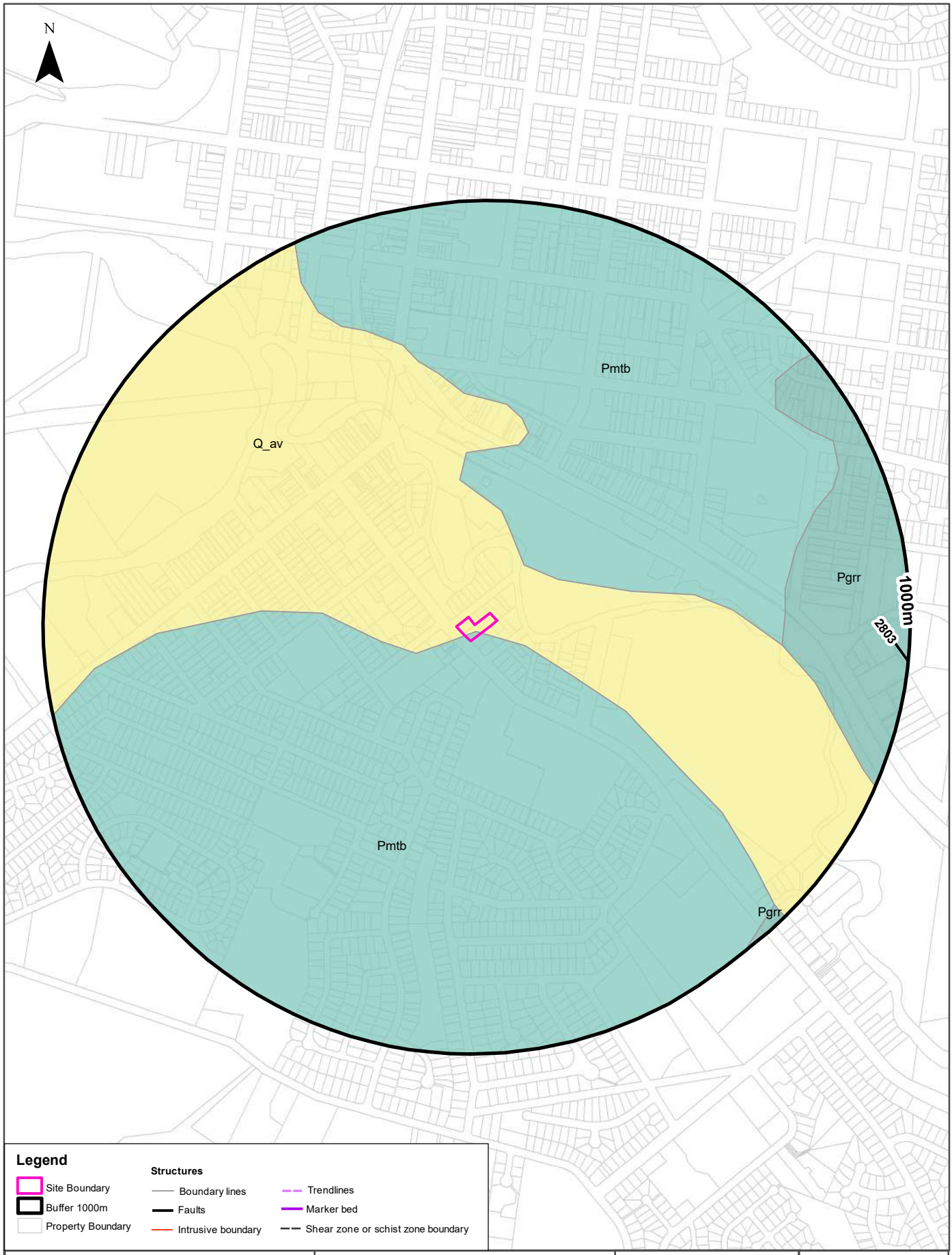
NGIS Bore ID	Drillers Log	Distance	Direction
10016825	0.00m-0.61m Topsoil 0.61m-3.05m Clay 3.05m-6.10m Shale 6.10m-6.71m Rock Soft 6.71m-7.62m Gravel	119m	East
10106748	0.00m-4.27m Loam 4.27m-5.18m Sand 5.18m-6.10m Sand Gravel	119m	East
10019707	0.00m-5.58m Loam 5.58m-11.88m Loam Sandy 11.88m-18.28m Sandstone Water Supply	493m	North West
10005723	0.00m-1.00m sandy loam, light brown 1.00m-4.00m silty sand, fine, light brown, silty minor clay 4.00m-5.00m sand, fine, light brown, silty minor clay 5.00m-6.00m sand, brown, minor clay 6.00m-7.00m gravelly sand, brown, minor clay 7.00m-8.00m sandy gravel, brown 8.00m-9.00m sand, brown, yellow/grey clay band 9.00m-10.00m clay, brwon and sandy gravel 10.00m-11.00m gravel, up to 30 mm 11.00m-12.00m gravel, brown up to 20mm 12.00m-13.00m gravel, brown, up to 20mm 13.00m-13.20m bedrock, mid grey fine grained sandstone	801m	West
10140937	0.00m-1.00m topsoil, brown silty lloam 1.00m-2.00m clay, brown, slightly silty 2.00m-6.00m clay, brown silty 6.00m-7.00m sand, brown, clayey gravel up to 20mm 5% clay 40%, sand 2-6mm 25%, <2mm 30% 7.00m-8.00m gravel and some clayey sand 8.00m-9.00m sandy gravel, brown 9.00m-10.00m sandy gravel, brown 10.00m-11.20m gravel, brown, sandy, poorly sorted, minor fines	841m	North West
10097334	0.00m-0.20m Concrete 0.20m-0.70m Fill 0.70m-2.00m Clay, sticky, light brown 2.00m-3.80m Clay, moist, light brown 3.80m-4.20m Clay, wet, light brown, coarse	851m	North
10031559	0.00m-0.20m Concrete 0.20m-0.70m Fill 0.70m-2.00m Clay, sticky, light brown 2.00m-3.80m Clay, moist, light brown 3.80m-4.20m Clay, wet, light brown, coarse	861m	North
10005535	0.00m-7.62m Clay 7.62m-8.07m Gravel River	870m	South East
10103668	0.00m-0.20m Concrete 0.20m-0.70m Fill 0.70m-2.00m Clay, sticky, light brown 2.00m-3.80m Clay, moist, light brown 3.80m-4.20m Clay, wet, light brown, coarse grained	875m	North
10130586	0.00m-5.48m Soil Black 5.48m-11.58m Gravel Sandy Water Supply	1003m	West
10053004	0.00m-20.00m Loam 20.00m-22.00m Claystone 22.00m-22.01m Shale	1061m	West
10146045	0.00m-1.00m Topsoil, brown, clayey loam 1.00m-5.00m clay, brown, minor fine sand and silt 5.00m-6.00m clay, brown, fine sandy 25% 6.00m-7.00m clay, brown, minor fine sand 7.00m-8.00m clay, brown, fine sandy 25% 8.00m-9.00m clay, brown, grey, also gravel up to 30mm 9.00m-10.00m gravel, clean, dry, up to 30mm, rounded 10.00m-11.00m gravel and sand, brown 11.00m-12.00m gravel, poorly sorted, minor clay and very fine sand 12.00m-13.00m gravel 13.00m-13.00m bedrock, dark grey siltstone	1113m	North West

NGIS Bore ID	Drillers Log	Distance	Direction
10146339	0.00m-1.00m topsoil, mid brown, silty loam 1.00m-2.00m clay, brown, light brown, fine sand and silt 2.00m-3.00m sandm fine, brown, some silt and clay 3.00m-4.00m sand, clayey, brown clay ~30% fine sand 4.00m-5.00m sand, fine, brown clayey and silty 5.00m-6.00m sand, brown 6.00m-7.00m sand, gravelly, light grey brown, gravel up to 10mm, occasionally up to 1mm 7.00m-8.00m sand, brown, occasional gravel up to 30mm 8.00m-9.00m sand, brown, minor fines 9.00m-10.00m gravel, sandy, brown, poorly sorted, gravel up to 40mm 10.00m-11.00m sand and gravel, probably in bands, gravel: sand 50:50 11.00m-12.00m sandy gravel, brown prroly sorted 12.00m-12.00m bedrock	1132m	North West
10047772	0.00m-57.91m Soil Nominal 0.00m-57.91m Drift Nominal 0.00m-57.91m Conglomerate Hard Nominal	1175m	East
10057174	0.00m-0.60m Topsoil : medium brown, fine, silty sandy topsoil with rare rounded coarse gravels and cobble 0.60m-4.50m Clay: (Alluvium) reddish brown, dry, firm, medium plasticity, uniform colour and consistency. becoming dark 4.50m-12.00m Gravel: Fine to coarse gravel in stiff clay matrix	1258m	North
10041276	0.00m-0.15m Topsoil: dark brown silty gravelly sand with rootlets 0.15m-1.60m Clay: Reddish brown, soft, dry, friable (Alluvium) 1.60m-4.50m Gravelly, Clay: dark brown, medium plasticity, dry, firm, gravels are fine, subrounded 4.50m-10.50m Gravel: fine to coarse gravel in clay matrix 10.50m-11.50m Clay: grey, very stiff clay, possible weathered shale	1261m	North
10096124	0.00m-0.40m Fill: Gravel roadbase and dense grey/brown gravelly sand 0.40m-0.60m Clay: (Alluvium) dark brown, soft to firm, dry, slightly sandy, low plasticity 0.60m-5.50m Clay (Alluvium): dark brown/black, soft, slightly moist, medium plasticity, uniform colour and consistency. 5.50m-12.40m Gravel: fine to coarse gravel in stiff clay matrix 12.40m-13.00m Clay: grey, stiff clay	1274m	North
10042884	0.00m-0.50m Fill; Gravel 0.50m-7.50m Clay, Silty & River Gravels	1318m	North
10093927	0.00m-0.20m Fill; Concrete 0.20m-0.50m Fill material 0.50m-7.50m Clay; with River Gravels	1333m	North
10042661	0.00m-0.03m Fill; Bitumen 0.03m-1.00m Clay; brown red 1.00m-10.50m Sandstone, weathered, red brown	1348m	North
10106774	0.00m-0.30m Soil 0.30m-1.52m Clay 1.52m-6.40m Sand Gravel	1349m	South East
10139112	0.00m-1.00m topsoil, dark brown, silty, sand loam 1.00m-2.00m topsoil, as above but light brown 2.00m-3.00m clay, brown, slightly silty and clayey, brown, well sorted 3.00m-4.00m fine sand, slightly silty 4.00m-5.00m sand, brown, slightly silty 5.00m-6.00m silty sand, some clay bands, brown, fine 6.00m-7.00m sand, brown, also a clay band 7.00m-8.00m gravel, brown, sandy 8.00m-9.00m gravel, brownsandy 9.00m-10.00m gravel, minor fines of clay 10.00m-12.00m gravel, brown, well rounded, mod to low sphericity 12.00m-13.00m gravel, clean, up to 30mm 13.00m-13.80m gravel, brown, clayey, some yellow brown fine sandy clay streaks, probably weathered bedrock	1364m	West
10007269	0.00m-0.91m Soil 0.91m-3.05m Clay 3.05m-10.06m Sand Gravel	1370m	South East
10084686	0.00m-0.30m Soil 0.30m-0.91m Clay 0.91m-1.22m Gravel 1.22m-1.83m Clay 1.83m-5.49m Loam Sandy 5.49m-6.10m Clay Stones	1447m	South East
10087435	0.00m-1.00m topsoil, dark brown grey, clayey loam 1.00m-2.00m clay, medium brown, some darker topsoil also 2.00m-3.00m silty fine sand, light brown, slightly clayey 3.00m-4.00m fine sand, light brown 4.00m-5.00m sand, fine 5.00m-6.00m sand fine, brown, slighlty clayey 6.00m-7.00m clay, brown to dark brown. Slightly silty and fine sandy 7.00m-8.00m clay 8.00m-9.00m clay, as above 9.00m-10.00m sand, fine to medium grained sand and some gravel at base of interval 10.00m-11.00m gravel, coarse, size limit unknown as broken 11.00m-12.00m gravel, as above 12.00m-12.00m bedrock, dark grey siltstone	1482m	West

NGIS Bore ID	Drillers Log	Distance	Direction
10139029	0.00m-1.00m topsoil, medium brwon silty clay 1.00m-2.00m clay, light brown silty 2.00m-3.00m sand, very fine, brwon, clayey and silty 3.00m-4.00m sand, fine, light brown 4.00m-5.00m gravel, sandy, light grey brown gravel up to 15mm 5.00m-6.00m gravel, sandy, as above, gravel coarser though 6.00m-7.00m gravel, brown grey, slightly clayey, gravel up to 20mm 7.00m-8.00m gravel, brown grey, similar to above though less clay 8.00m-9.00m gravel, clean, some sand 9.00m-10.00m gravel, sandy, brown up to 20mm 10.00m-11.00m gravel, brown, silty clay band 11.00m-12.50m gravel, brwon, up to 30mm, some clay 12.50m-12.50m fine sandy clay, yellow brown, weathered sandstone, fine grained	1498m	West
10038328	0.00m-2.00m topsoil, brown loam clay 2.00m-3.00m clay, brown, fine sandy 40% 3.00m-4.00m sand, fine, brown, occasionally up to 2mm, clayey 4.00m-5.00m sand, brown 5.00m-6.00m sand, brown 6.00m-7.00m sand and gravel, 7.00m-8.00m gravel, sandy, brwon clayey gravel up to 25mm 8.00m-9.00m gravel, and clean sand, dry gravel up to 20mm 9.00m-10.00m gravel, up to 40mm 10.00m-11.00m gravel, brown, up to 30mm 11.00m-12.00m gravel, and clay 12.00m-14.00m gravel, clean up to 40mm 14.00m-14.00m bedrock, dark grey mudstone	1530m	West
10059044	0.00m-3.00m Sandy Loam 3.00m-6.00m Black Clay 6.00m-9.00m Sandy Loam 9.00m-14.40m Gravel 14.40m-15.60m Black Soapstone	1569m	West
10126767	0.00m-1.00m Topsoil 1.00m-9.00m Sand Dry 9.00m-13.00m Gravel Water Supply	1819m	North West
10141467	0.00m-6.00m SURFACE SOIL LOAM 6.00m-14.30m GRAVEL 14.30m-19.00m BLUE CLAY & GRAVEL	1872m	North
10003937	0.00m-0.30m Sand 0.30m-9.75m Clay Very Sandy Water Supply 9.75m-10.67m Clay Water Supply 10.67m-11.58m Clay Sand Water Supply 11.58m-12.50m Sand Fine Gravel Water Supply	1882m	North
10114232	0.00m-5.49m Soil Alluvial 5.49m-10.97m Gravel Water Supply	1920m	West
10004586	0.00m-0.61m Sand 0.61m-7.32m Clay Sandy 7.32m-9.75m Clay Very Sandy Water Supply 9.75m-10.36m Clay Water Supply 10.36m-11.58m Gravel Clayey Water Supply 11.58m-12.80m Sand Coarse Gravel Water Supply	1955m	North
10110060	0.00m-7.62m Soil Alluvial 7.62m-10.97m Gravel Water Supply	1972m	West

Geology

36-38 Maitland Street, Muswellbrook, NSW 2333



Geology

36-38 Maitland Street, Muswellbrook, NSW 2333

Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Q_av	Alluvial valley deposits	Silt, clay, (fluvially deposited) lithic to quartz-lithic sand, gravel.	/Alluvium//Alluvial valley deposits//	Quaternary (base) to Now (top)	Clastic sediment	0m
Pmtb	Branxton Formation	Conglomerate, sandstone, siltstone.	/Maitland Group//Branxton Formation//	Roadian (base) to Roadian (top)	Conglomerate	0m
Pgrr	Rowan Formation	Sandstone, siltstone, claystone, coal and minor conglomerate. Averages 110 m thickness, containing up to 6 coal seams.	/Greta Coal Measures//Rowan Formation//	Artinskian (base) to Kungurian (top)	Sandstone	693m

Linear Geological Structures

What are the Dyke, Sill, Fracture, Lineament and Vein trendlines within the dataset buffer?

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

What are the Faults, Shear zones or Schist zones, Intrusive boundaries & Marker beds within the dataset buffer?

Map ID	Boundary Type	Description	Map Sheet Name	Distance
2803	Faulted boundary	Fault showing relative displacement: up, down	Muswellbrook 1:25,000 Geological Sheet	923m

Naturally Occurring Asbestos Potential

36-38 Maitland Street, Muswellbrook, NSW 2333

Naturally Occurring Asbestos Potential

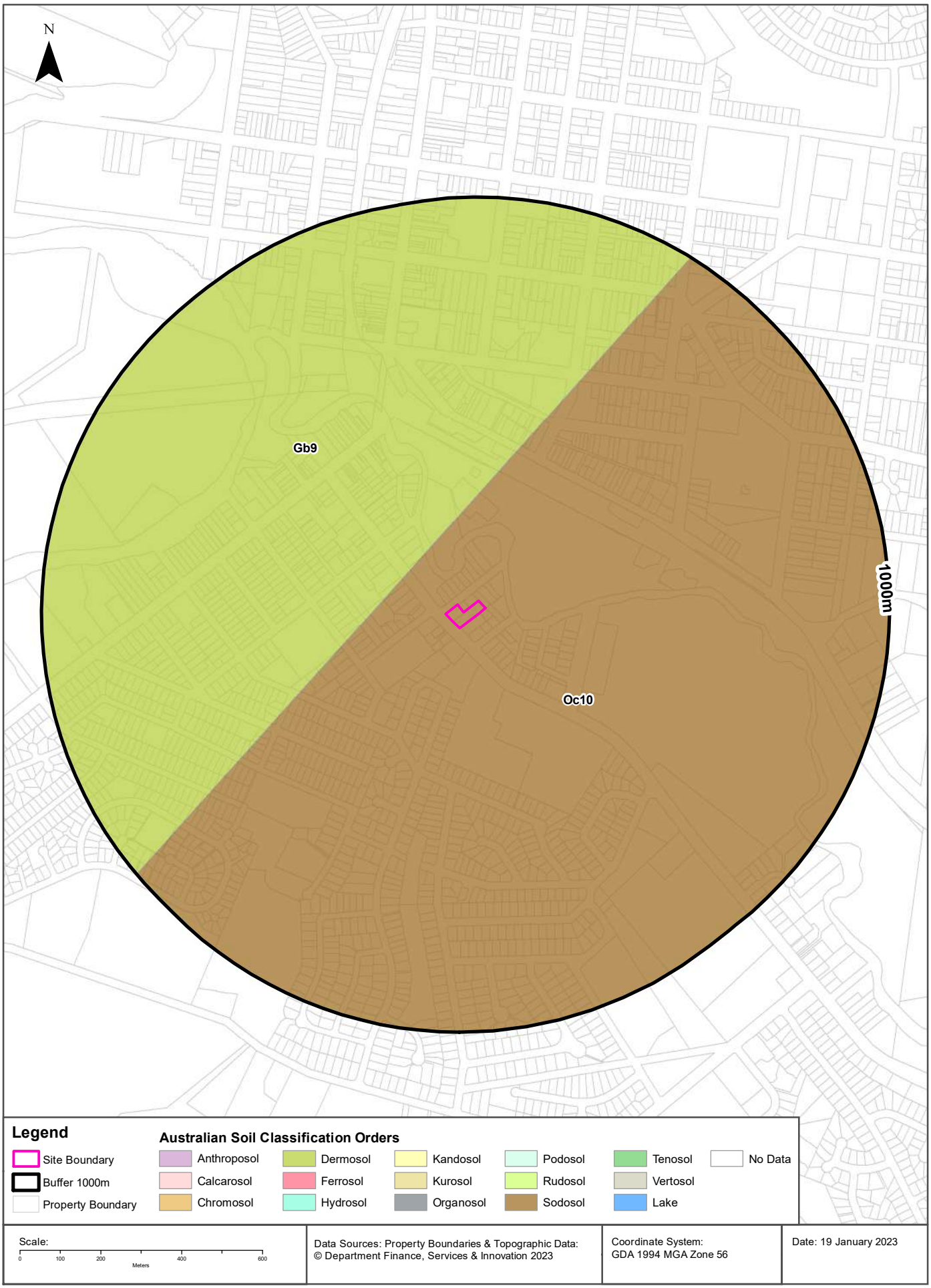
Naturally Occurring Asbestos Potential within the dataset buffer:

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

Naturally Occurring Asbestos Potential Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

36-38 Maitland Street, Muswellbrook, NSW 2333



Soils

36-38 Maitland Street, Muswellbrook, NSW 2333

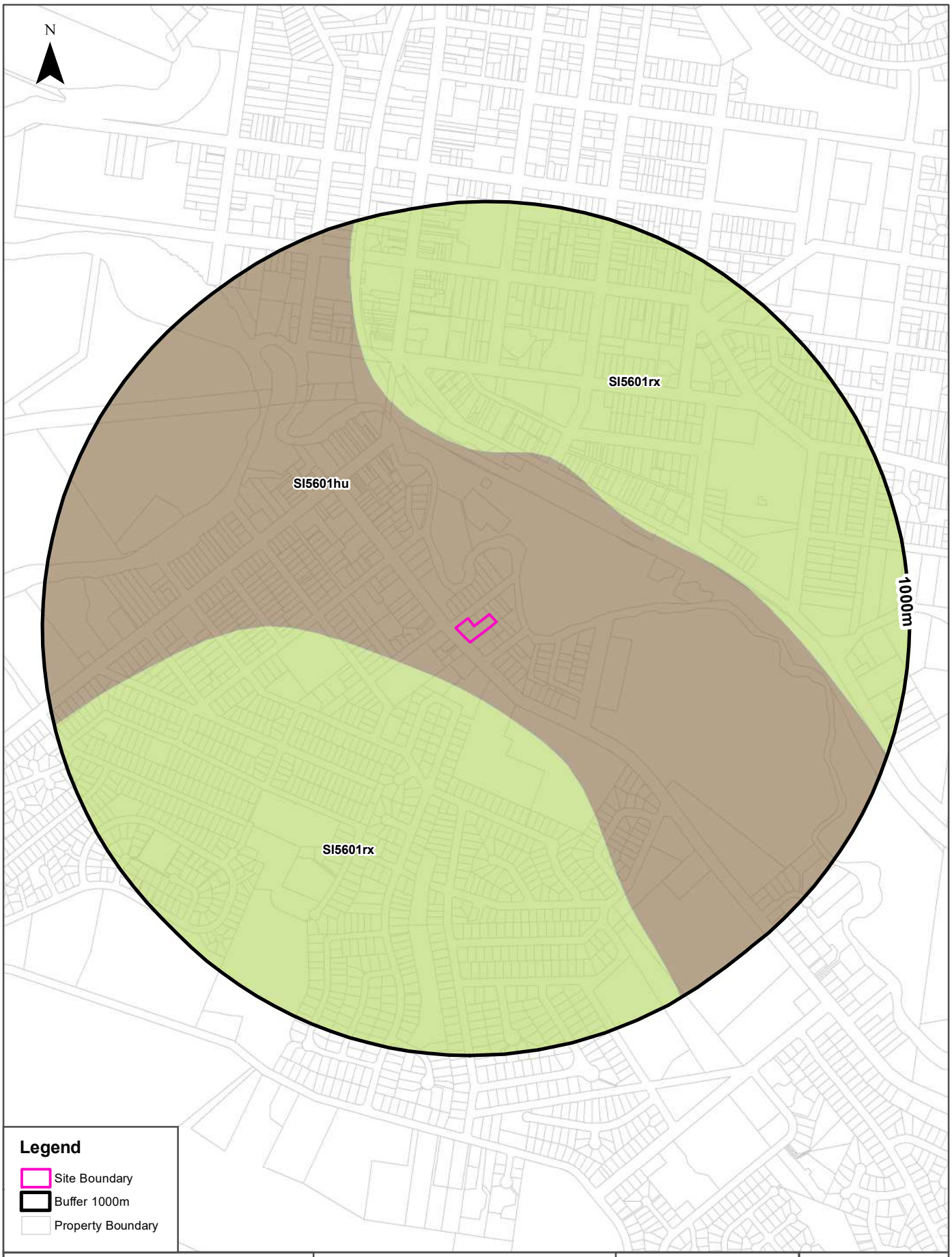
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Oc10	Sodosol	Rolling to hilly country with some steep slopes, gently undulating hill-tops, low cliffs, and occasionally escarpments; traversed by flat to undulating valleys: chief soils are hard alkaline and neutral red brown, yellow, and dark soils: red (Dr2.33), (Dr2.23), (Dr2.43), (Dr2.32), (Dr2.22); brown (Db1.33) (Db1.43); yellow (Dy2.33), (Dy2.43), (Dy3.43), (Dy3.42); dark (Dd1.33), (Dd1.43), (Dd1.42) (Dr2.32) notably occurs on gravelly hill-tops. Associated are: the (Ug5) soils of unit Ke12, which forms soil complexes with the above (D) soils in some areas; some basaltic hills and knolls of (Ug5.1) (Ug5.3), (Db3.12), (Gn3.42), and (Um6) soils; some (Uf6.31) and/or (Gn3.13) soils; some (Um4.1 and/or (Um4.2) soils and possibly other shallow (Um) or (Uc) soils on steep slopes; (Dy3.41) (Dr3.41), and (Dr2.41) soils as for unit Tb41; and various (Um) and (Uc) soils along the streams where some salinity is evident. This unit is very broad and the soil pattern is complex. Northward it grades towards the soil conditions found in units Qb19 and Ob14, having similarities to unit Ob10 in the Murrurundi area. To the south-east it grades into unit Tb42, the boundary between the two units is indefinite.	0m	On-site
Gb9	Dermosol	River terraces and flood-plains: chief soils are dark friable loamy soils (Um6.11) locally underlain by either sandy or clayey substrata, and occurring on the middle river terraces. Associated are hard alkaline dark soils (Dd1.33 and Dd1.43), and/or friable dark soils (Dd3.12), and/or hard alkaline brown soils (Db1.33) on terrace remnants flanking the valley slopes; siliceous sands (Uc1.23) on low terraces adjoining the river; and local areas of various soils including (Ug5.15), (Ug5.16) and possibly (Ug5.4), (Db1), and (Dy) soils. Locally the (Ug5) soils may form soil complexes with the (Dd) and (Db) soils.	139m	North West

Soil Landscapes of Central and Eastern NSW

36-38 Maitland Street, Muswellbrook, NSW 2333



Soils

36-38 Maitland Street, Muswellbrook, NSW 2333

Soil Landscapes of Central and Eastern NSW

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

Soil Code	Name	Distance	Direction
SI5601hu	Hunter	0m	On-site
SI5601rx	Roxburgh	111m	South

Acid Sulfate Soils

36-38 Maitland Street, Muswellbrook, NSW 2333

Environmental Planning Instrument - Acid Sulfate Soils

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

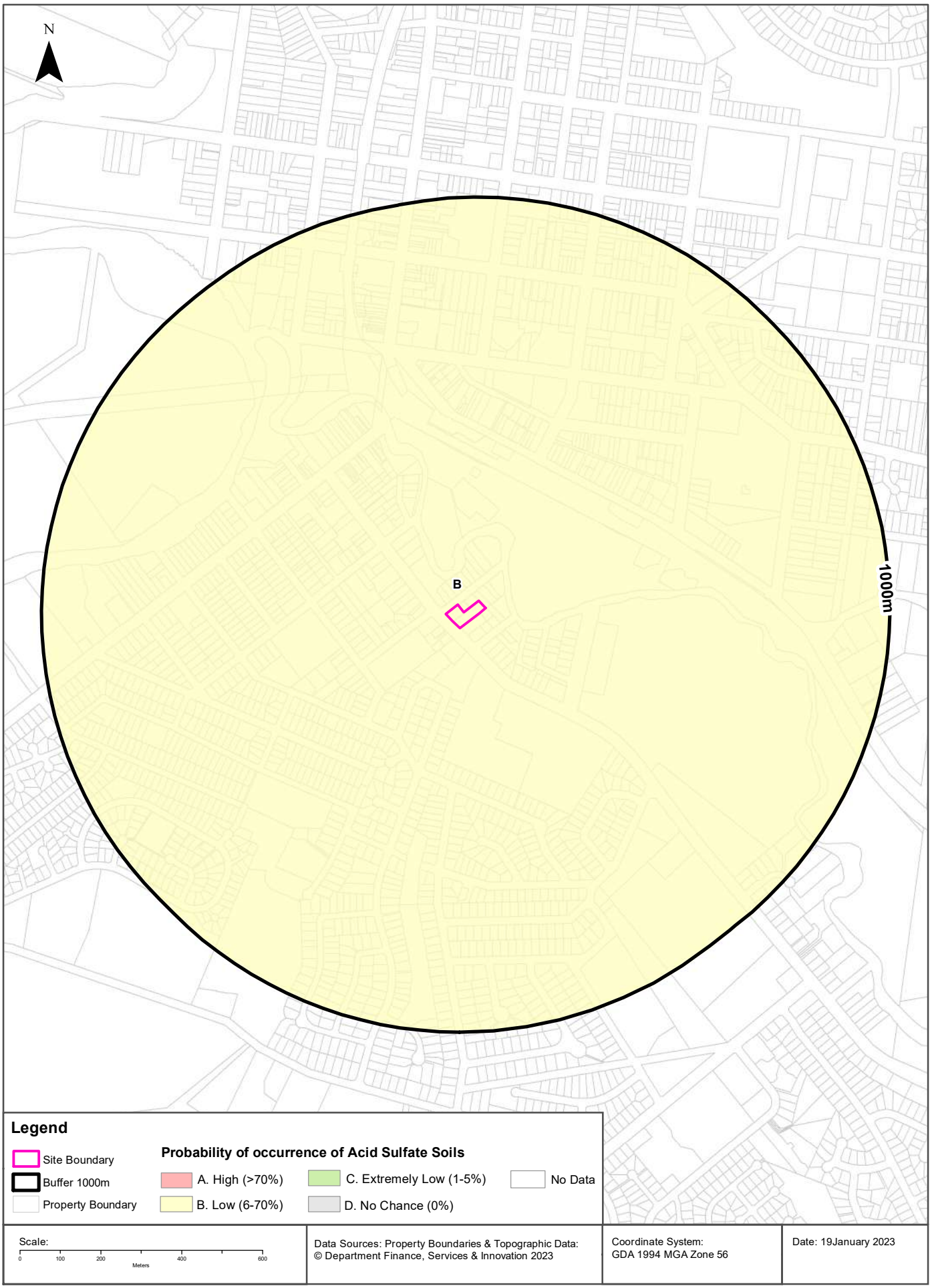
Soil Class	Description	EPI Name
N/A		

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

36-38 Maitland Street, Muswellbrook, NSW 2333



Acid Sulfate Soils

36-38 Maitland Street, Muswellbrook, NSW 2333

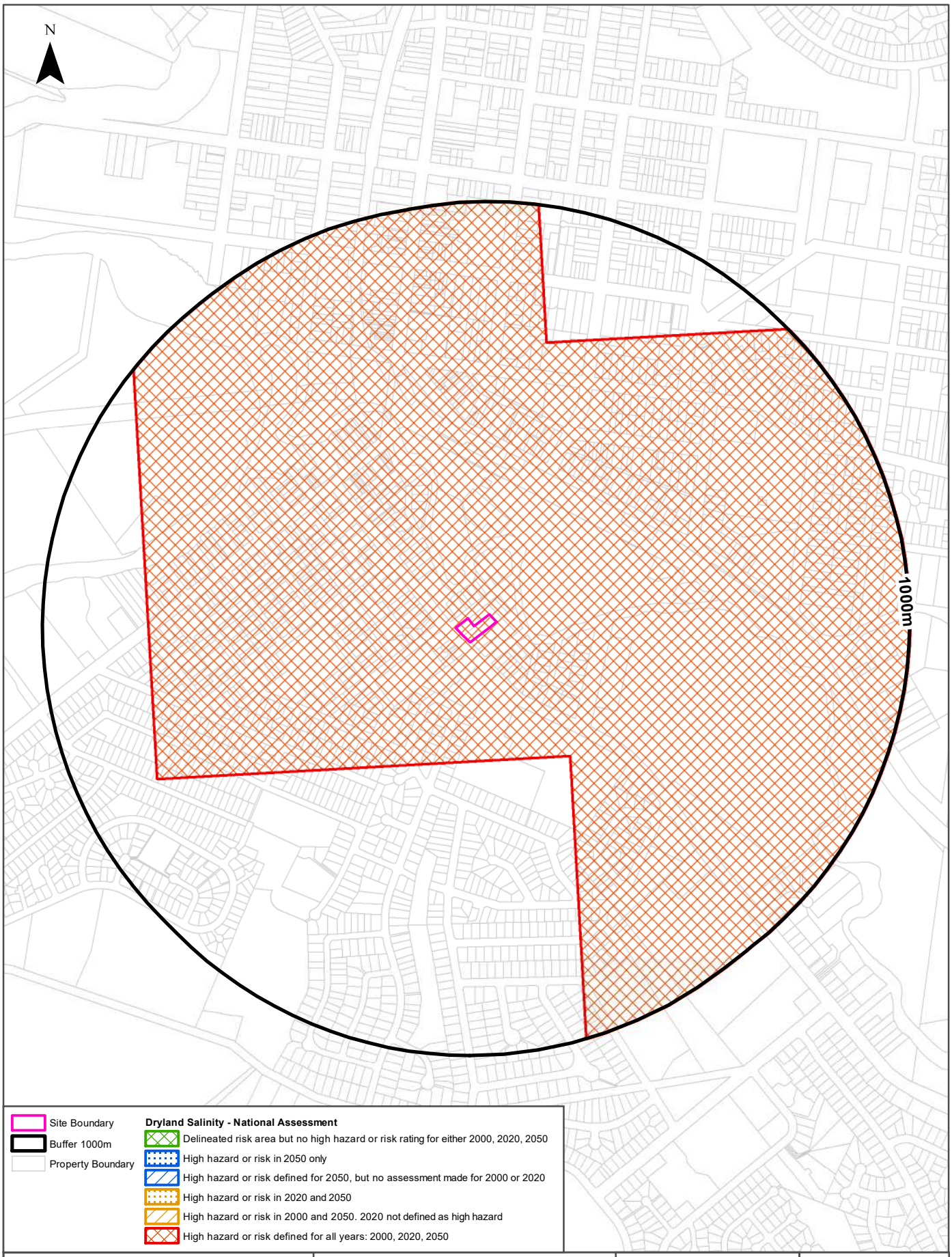
Atlas of Australian Acid Sulfate Soils

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

36-38 Maitland Street, Muswellbrook, NSW 2333



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Dryland Salinity

36-38 Maitland Street, Muswellbrook, NSW 2333

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

Yes

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

Yes

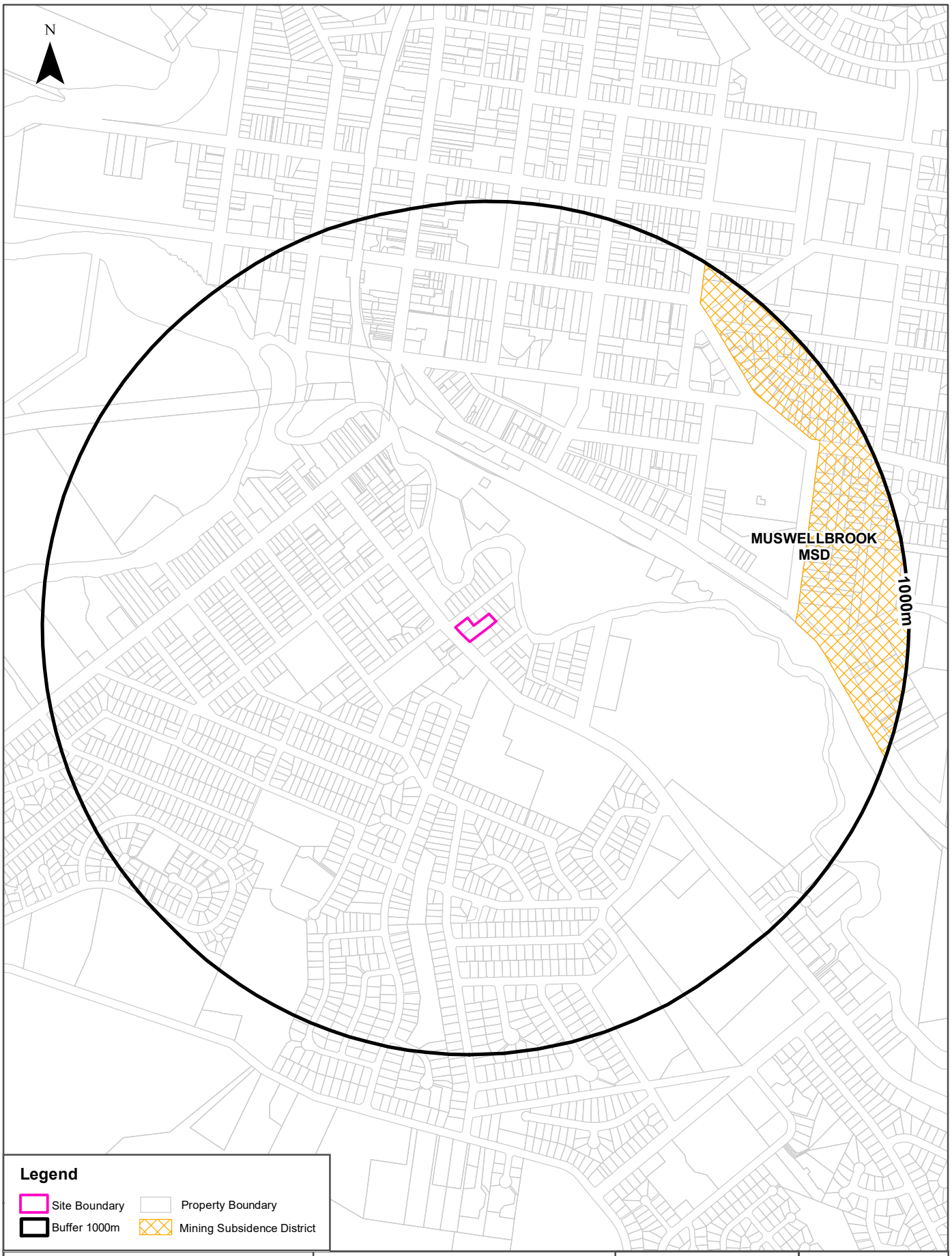
What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	On-site

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 Subsidence Districts

36-38 Maitland Street, Muswellbrook, NSW 2333



Mining

36-38 Maitland Street, Muswellbrook, NSW 2333

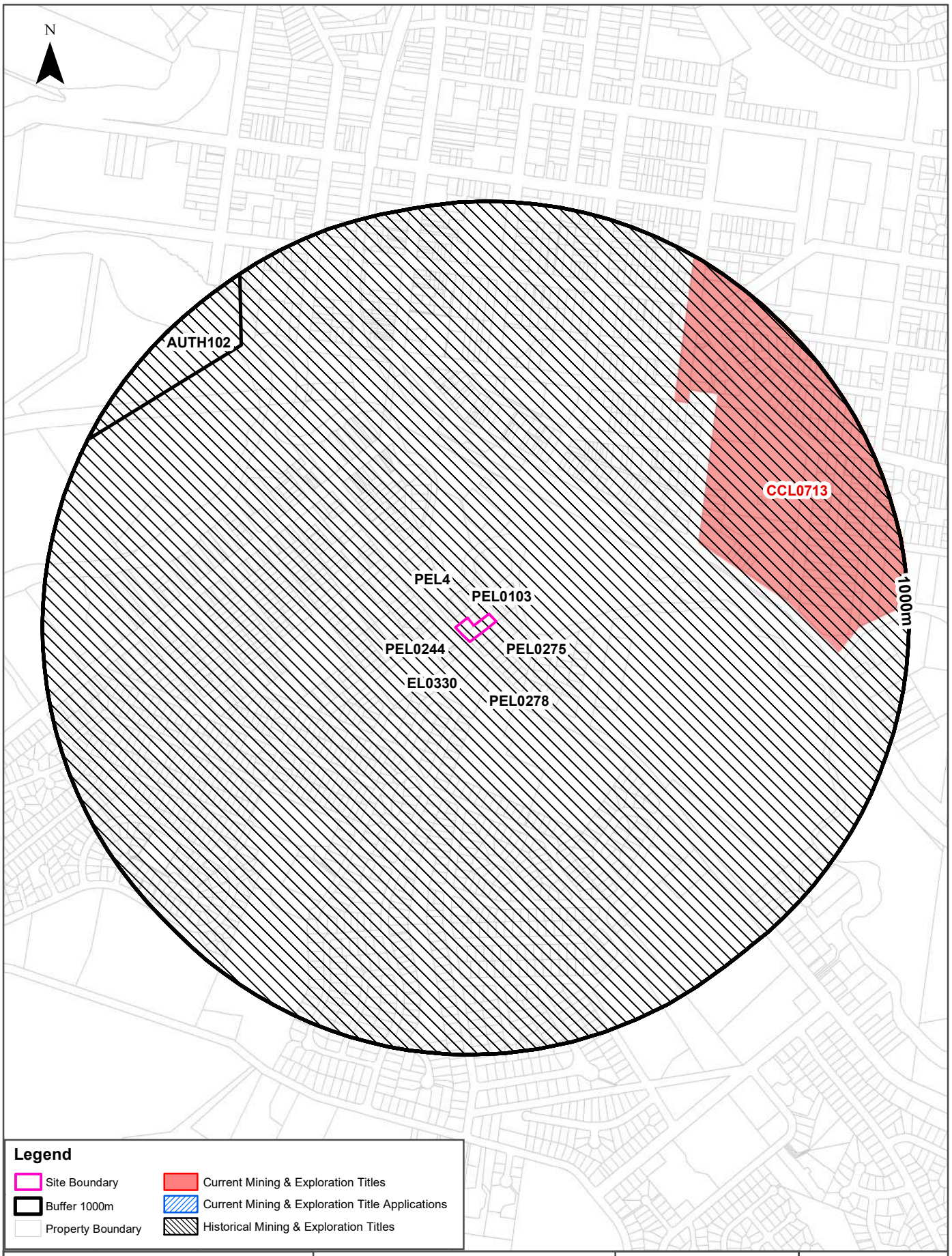
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
MUSWELLBROOK	724m	East

Mining & Exploration Titles

36-38 Maitland Street, Muswellbrook, NSW 2333



Data Sources: Property Boundaries & Topographic Data:
© Department Finance, Services & Innovation 2023

Coordinate System:
GDA 1994 MGA Zone 56

Date: 19 January 2023

Mining

36-38 Maitland Street, Muswellbrook, NSW 2333

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
CCL0713	MUSWELLBROOK COAL COMPANY LTD	05/04/1990	24/11/2024	20081204	MINING	COAL	Coal	526m	North East

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

36-38 Maitland Street, Muswellbrook, NSW 2333

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
EL0330	ARMCO (AUST) PTY LTD	19700401	19730401	COAL	Coal	0m	On-site
PEL0278	THE ELECTRICITY COMMISSION OF NSW (TRADING AS PACIFIC POWER)	19910504	19931111	PETROLEUM	Petroleum	0m	On-site
PEL0275	SYDNEY OIL COMPANY PTY LTD, MACQUARIE OIL (SYDNEY) PTY LTD, NORTH MICHIGAN EXPLORATION CO., BASE RESOURCES LTD, GOVERNME	19860502	19880402	PETROLEUM	Petroleum	0m	On-site
PEL0244	FRONTIER RESOURCES AUSTRALIA LTD, SION RESOURCES AUSTRALIA LTD, SYDNEY OIL COMPANY, PETROSEARCH PTY LTD	19810110	19841210	PETROLEUM	Petroleum	0m	On-site
PEL0103	AUSTRALIAN OIL AND GAS CORPORATION LTD			PETROLEUM	Petroleum	0m	On-site
PEL4	AGL UPSTREAM INVESTMENTS PTY LIMITED	19931111	20011129	MINERALS		0m	On-site
AUTH102	SECRETARY OF THE DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT	19980121	19980922	MINERALS		858m	North West

State Environmental Planning Policy

36-38 Maitland Street, Muswellbrook, NSW 2333

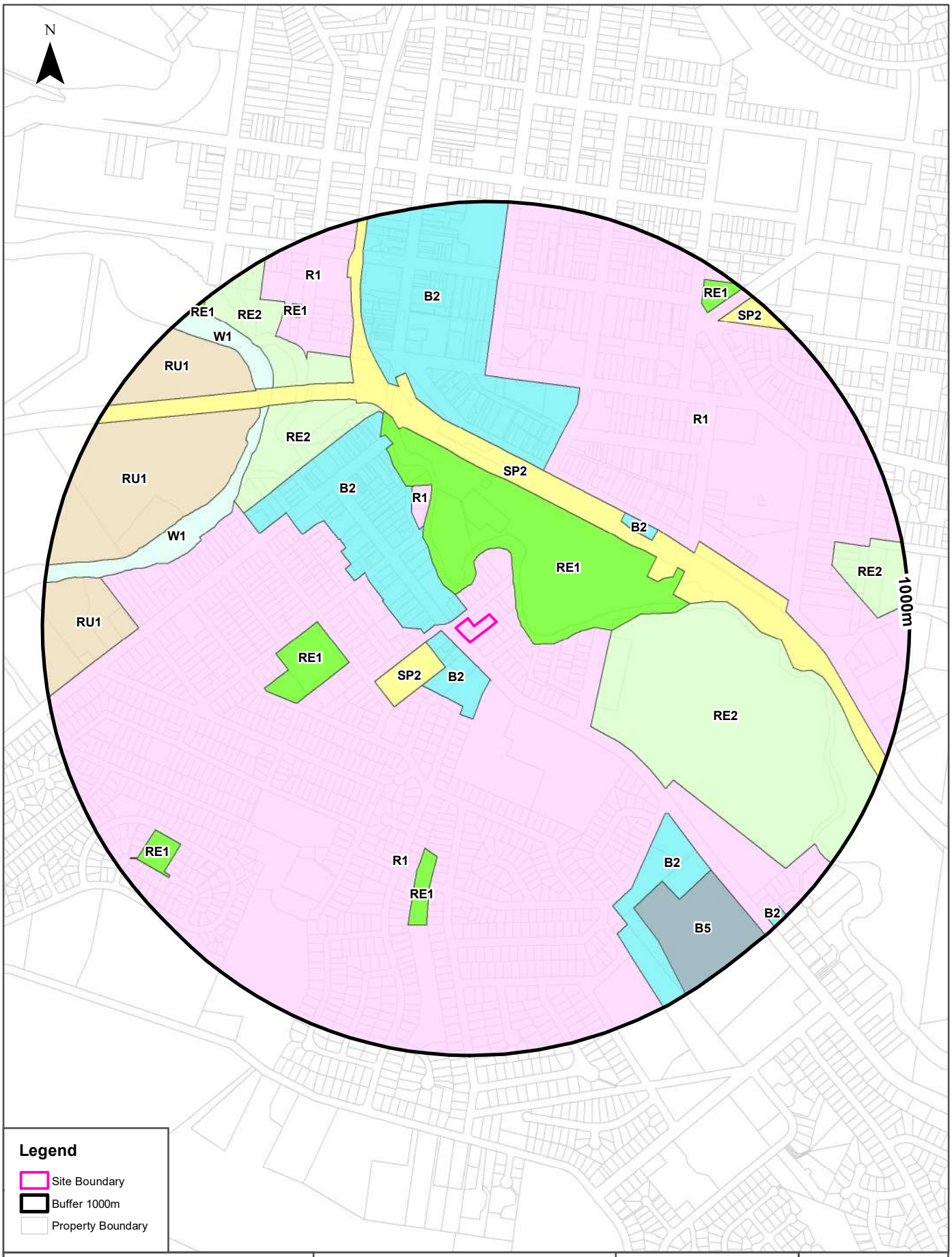
State Significant Precincts

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

36-38 Maitland Street, Muswellbrook, NSW 2333



Scale: 0 100 200 400 600 Meters	Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023 Planning: NSW Crown Copyright - Planning & Environment	Coordinate System: GDA 1994 MGA Zone 56	Date: 19 January 2023

Environmental Planning Instrument

36-38 Maitland Street, Muswellbrook, NSW 2333

Land Zoning

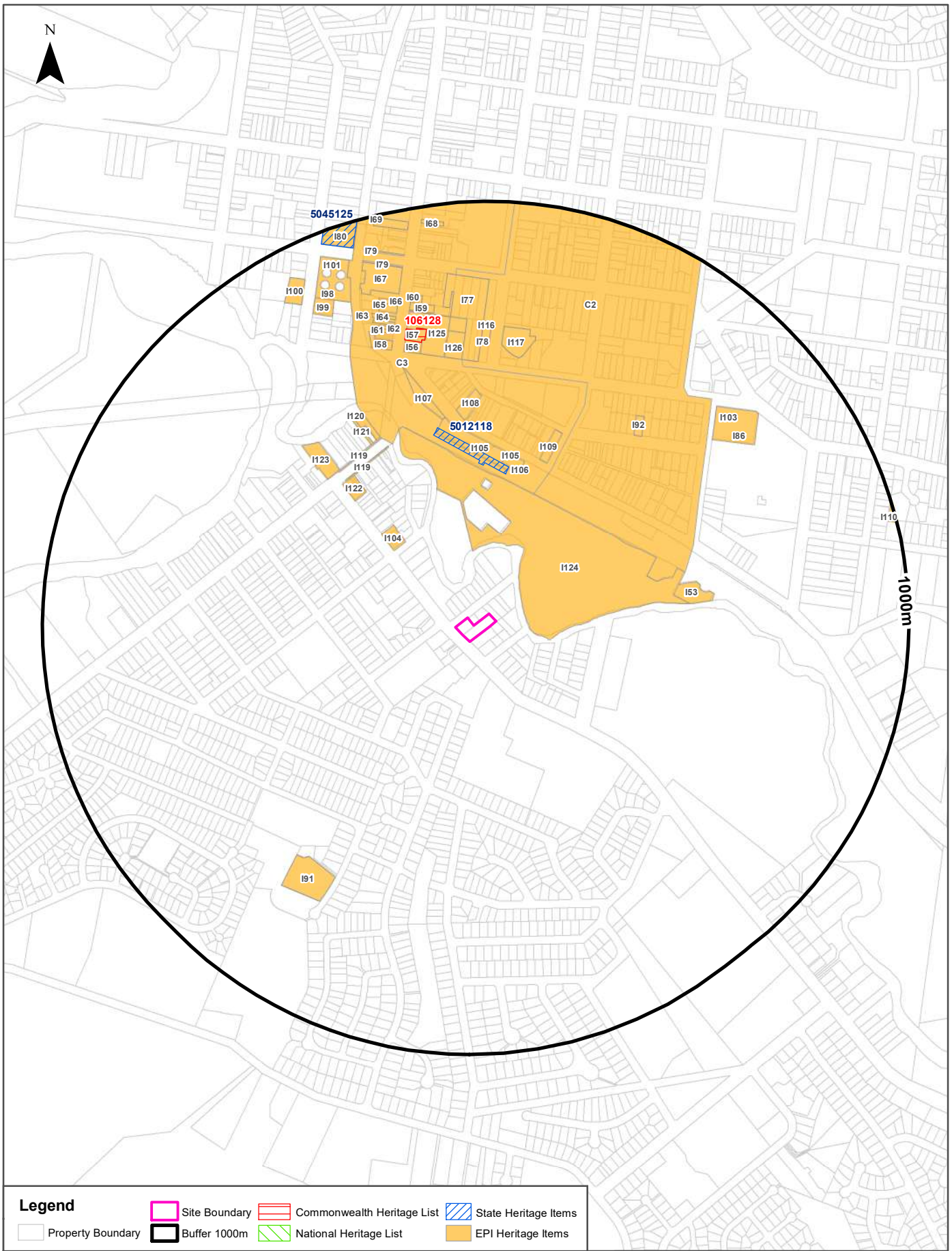
What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R1	General Residential		Muswellbrook Local Environmental Plan 2009	18/11/2022	18/11/2022	18/11/2022	Map Amendment No 1	0m	On-site
B2	Local Centre		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	20m	North West
B2	Local Centre		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	30m	South
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	52m	North East
SP2	Infrastructure	Defence	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	79m	South West
R1	General Residential		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	247m	North West
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	272m	West
RE2	Private Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	275m	East
SP2	Infrastructure	Rail Infrastructure	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	308m	North East
R1	General Residential		Muswellbrook Local Environmental Plan 2009	30/10/2015	30/10/2015	18/11/2022	Amendment No 12	370m	North East
B2	Local Centre		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	372m	North
B2	Local Centre		Muswellbrook Local Environmental Plan 2009	01/11/2013	01/11/2013	18/11/2022	Amendment No 10	387m	North East
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	511m	South
RE2	Private Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	535m	North West
W1	Natural Waterways		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	612m	West
B2	Local Centre		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	618m	South East
RE2	Private Recreation		Muswellbrook Local Environmental Plan 2009	01/11/2013	01/11/2013	18/11/2022	Amendment No 10	634m	North West
RU1	Primary Production		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	655m	North West
R1	General Residential		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	694m	North West
W1	Natural Waterways		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	732m	North West
B5	Business Development		Muswellbrook Local Environmental Plan 2009	06/07/2012	06/07/2012	18/11/2022	Amendment No 2	740m	South East
RU1	Primary Production		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	751m	North West
RU1	Primary Production		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	769m	West
RE2	Private Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	822m	East
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	835m	North West
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	848m	South West
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	900m	North East
SP2	Infrastructure	Health Services Facilities	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	901m	North East

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
B2	Local Centre		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	967m	South East
RE1	Public Recreation		Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	18/11/2022	Amendment No 7	979m	North West

Heritage Items

36-38 Maitland Street, Muswellbrook, NSW 2333



Legend

Property Boundary	Site Boundary	Commonwealth Heritage List	State Heritage Items
	Buffer 1000m	National Heritage List	EPI Heritage Items

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2023
Heritage - NSW Crown Copyright - Planning & Environment

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Heritage

36-38 Maitland Street, Muswellbrook, NSW 2333

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
106128	Muswellbrook Post Office	7 Bridge St, Muswellbrook NSW	1/09/076/0021	Historic	Listed place	08/11/2011	677m	North

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

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							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

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
5012118	Muswellbrook Railway Station and yard group	Main Northern railway, Muswellbrook	MUSWELLBROOK	02/04/1999	01208	2820	342m	North
5045125	St Alban's Anglican Church	Hunter Terrace, Muswellbrook	MUSWELLBROOK	02/04/1999	00458	1147	937m	North

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

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

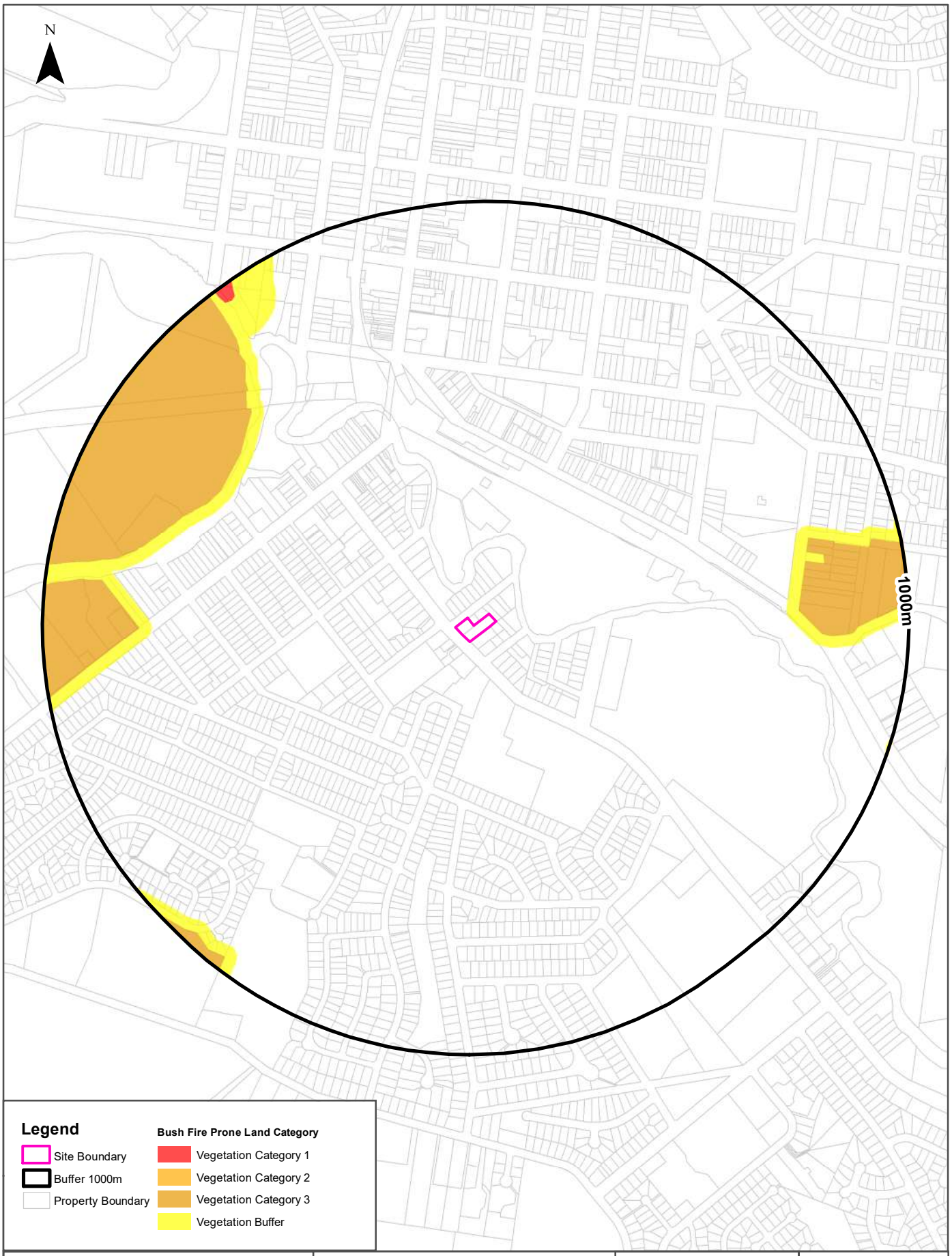
Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I124	Fitzgerald/Olympic Park Gates	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	70m	North East
I104	Hennor	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	238m	North West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
C2	Residential Heritage Conservation Area	Conservation Area - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	307m	North East
C3	Muswellbrook Business Heritage Conservation Area	Conservation Area - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	309m	North
I105	Railway Station	Item - General	State	Muswellbrook Local Environmental Plan 2009	30/10/2015	30/10/2015	05/08/2016	350m	North
I105	Railway Station	Item - General	State	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	352m	North
I106	Railway Signal Box	Item - General	State	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	352m	North
I109	Muswellbrook Hotel	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	390m	North East
I122	Prince of Wales Tavern	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	392m	North West
I53	Railway Depot (Roundhouse)	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	432m	East
I119	Kerb and guttering	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	443m	North West
I119	Kerb and guttering	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	470m	North West
I108	Railway Hotel	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	473m	North
I123	Valley Hotel/Motel	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	473m	North West
I121	Former Barber Shop	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	480m	North West
I120	Former Royal Hotel	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	483m	North West
I107	Simpson park and Reserve	Item - Landscape	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	484m	North
I92	Minch's Wine Shop	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	556m	North East
I77	St James Roman Catholic Church	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	612m	North
I126	Shamrock Hotel	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	620m	North
I117	Atherstone	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	624m	North
I125	Police Station	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	632m	North
I56	School of Arts/Town Hall	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	650m	North
I91	"Skellatar" (St Mary's Catholic School)	Item - General	State	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	650m	South West
I78	Roman Catholic Convent	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	659m	North
I116	St James Roman Catholic Presbytery	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	659m	North

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I58	Royal Hotel	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	674m	North
I57	Post Office	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	677m	North
I103	Muswellbrook High School	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	682m	North East
I86	Muswellbrook Infants School	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	682m	North East
I61	Taskers Pharmacy	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	711m	North
I62	Edward Higgens Building	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	718m	North
I63	Shop Front	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	730m	North
I59	Former Picture Theatre	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	742m	North
I64	Billiards Building	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	743m	North
I65	National Australia Bank Building	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	758m	North
I60	Westpac Bank Building	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	769m	North
I66	Former Campbel'sl and Co Store	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	776m	North
I99	House	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	801m	North West
I67	Campbell's Corner	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	802m	North
I98	St Albans Anglican Rectory	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	816m	North
I101	St Albans Sunday School	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	816m	North
I100	Brighton Villa	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	859m	North West
I79	Kerb and guttering	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	864m	North
I79	Kerb and guttering	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	889m	North
I80	St Albans Anglican Church	Item - General	State	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	937m	North
I68	Masonic Lodge	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	947m	North
I69	Uniting Church	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	950m	North
I110	House	Item - General	Local	Muswellbrook Local Environmental Plan 2009	15/06/2012	15/06/2012	05/08/2016	979m	East

Natural Hazards - Bush Fire Prone Land

36-38 Maitland Street, Muswellbrook, NSW 2333



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2023. Property Boundaries: © Department Finance, Services & Innovation 2023

Coordinate System: GDA 1994 MGA Zone 56

Date: 19 January 2023

Natural Hazards

36-38 Maitland Street, Muswellbrook, NSW 2333

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	628m	North West
Vegetation Category 3	658m	North West
Vegetation Category 1	959m	North West

Ecological Constraints

36-38 Maitland Street, Muswellbrook, NSW 2333

Vegetation - Eastern Bushland Database (North Region)

What Vegetation exists within the dataset buffer?

Veg Code	Veg Desc	NVISCode	NVISDesc	Distance	Direction
N/A	No records in buffer				

Vegetation Eastern Bushland Database Data Source: NSW Office of Environment and Heritage

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

36-38 Maitland Street, Muswellbrook, NSW 2333

Groundwater Dependent Ecosystems Atlas

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

Ecological Constraints

36-38 Maitland Street, Muswellbrook, NSW 2333

Inflow Dependent Ecosystems Likelihood

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

Ecological Constraints

36-38 Maitland Street, Muswellbrook, NSW 2333

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Anseranas semipalmata	Magpie Goose	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Anthochaera phrygia	Regent Honeyeater	Critically Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Ardenna pacifica	Wedge-tailed Shearwater	Not Listed	Not Sensitive	Not Listed	JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calyptorhynchus lathami	Glossy Black-Cockatoo	Vulnerable	Category 2	Vulnerable	
Animalia	Aves	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Daphoenositta chrysoptera	Varied Sittella	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Ephippiorhynchus asiaticus	Black-necked Stork	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Haliaeetus leucogaster	White-bellied Sea-Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hirundapus caudacutus	White-throated Needletail	Not Listed	Not Sensitive	Vulnerable	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Not Sensitive	Critically Endangered	
Animalia	Aves	Lophoictinia isura	Square-tailed Kite	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica boodang	Scarlet Robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stagonopleura guttata	Diamond Firetail	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Stictonetta naevosa	Freckled Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Tyto novaehollandiae	Masked Owl	Vulnerable	Category 3	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Tyto tenebricosa	Sooty Owl	Vulnerable	Category 3	Not Listed	
Animalia	Mammalia	Chalinolobus dwyeri	Large-eared Pied Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Dasyurus maculatus	Spotted-tailed Quoll	Vulnerable	Not Sensitive	Endangered	
Animalia	Mammalia	Falsistrellus tasmaniensis	Eastern False Pipistrelle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus australis	Little Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Miniopterus orianae oceanensis	Large Bent-winged Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Myotis macropus	Southern Myotis	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Nyctophilus corbeni	Corben's Long-eared Bat	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Petaurus norfolcensis	Squirrel Glider	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascogale tapoatafa	Brush-tailed Phascogale	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Phascolarctos cinereus	Koala	Endangered	Not Sensitive	Endangered	
Animalia	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Animalia	Mammalia	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Scoteanax rueppellii	Greater Broad-nosed Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Vespadelus troughtoni	Eastern Cave Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Delma impar	Striped Legless Lizard	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia pendula	Weeping Myall, Boree	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Cymbidium canaliculatum	Tiger Orchid	Endangered Population	Category 2	Not Listed	
Plantae	Flora	Diuris tricolor	Pine Donkey Orchid	Endangered Population, Vulnerable	Category 2	Not Listed	
Plantae	Flora	Eucalyptus camaldulensis	River Red Gum	Endangered Population	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus glaucina	Slaty Red Gum	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Eucalyptus nicholii	Narrow-leaved Black Peppermint	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Isotoma fluviatilis subsp. fluviatilis		Not Listed	Category 3	Extinct	
Plantae	Flora	Lepidium hyssopifolium	Aromatic Peppercress	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Prasophyllum petilum	Tarengo Leek Orchid	Endangered	Category 2	Endangered	

Data does not include NSW category 1 sensitive species.

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

USE OF REPORT - APPLICABLE TERMS

The following terms apply to any person (End User) who is given the Report by the person who purchased the Report from Lotsearch Pty Ltd (ABN: 89 600 168 018) (Lotsearch) or who otherwise has access to the Report (Terms). The contract terms that apply between Lotsearch and the purchaser of the Report are specified in the order form pursuant to which the Report was ordered and the terms set out below are of no effect as between Lotsearch and the purchaser of the Report.

1. End User acknowledges and agrees that:
   (a) the Report is compiled from or using content (**Third Party Content**) which is comprised of:
      (i) content provided to Lotsearch by third party content suppliers with whom Lotsearch has contractual arrangements or content which is freely available or methodologies licensed to Lotsearch by third parties with whom Lotsearch has contractual arrangements (**Third Party Content Suppliers**); and
      (ii) content which is derived from content described in paragraph (i);
   (b) Neither Lotsearch nor Third Party Content Suppliers takes any responsibility for or give any warranty in relation to the accuracy or completeness of any Third Party Content included in the Report including any contaminated land assessment or other assessment included as part of a Report;
   (c) the Third Party Content Suppliers do not constitute an exhaustive set of all repositories or sources of information available in relation to the property which is the subject of the Report (**Property**) and accordingly neither Lotsearch nor Third Party Content Suppliers gives any warranty in relation to the accuracy or completeness of the Third Party Content incorporated into the report including any contaminated land assessment or other assessment included as part of a Report;
   (d) Reports are generated at a point in time (as specified by the date/time stamp appearing on the Report) and accordingly the Report is based on the information available at that point in time and Lotsearch is not obliged to undertake any additional reporting to take into consideration any information that may become available between the point in time specified by the date/time stamp and the date on which the Report was provided by Lotsearch to the purchaser of the Report;
   (e) Reports must be used or reproduced in their entirety and End User must not reproduce or make available to other persons only parts of the Report;
   (f) Lotsearch has not undertaken any physical inspection of the property;
   (g) neither Lotsearch nor Third Party Content Suppliers warrants that all land uses or features whether past or current are identified in the Report;
   (h) the Report does not include any information relating to the actual state or condition of the Property;
   (i) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of Land or Property for any particular purpose
   (j) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
   (k) the End User should undertake its own inspections of the Land or Property to satisfy itself that there are no defects or failures
2. The End User may not make the Report or any copies or extracts of the report or any part of it available to any other person. If End User wishes to provide the Report to any other person or make extracts or copies of the Report, it must contact the purchaser of the Report before doing so to ensure the proposed use is consistent with the contract terms between Lotsearch and the purchaser.
3. Neither Lotsearch (nor any of its officers, employees or agents) nor any of its Third Party Content Suppliers will have any liability to End User or any person to whom End User provides the Report and End User must not represent that Lotsearch or any of its Third Party Content Suppliers accepts liability to any such person or make any other representation to any such person on behalf of Lotsearch or any Third Party Content Supplier.
4. The End User hereby to the maximum extent permitted by law:
   (a) acknowledges that the Lotsearch (nor any of its officers, employees or agents), nor any of its Third Party Content Supplier have any liability to it under or in connection with the

Report or these Terms;

(b) waives any right it may have to claim against Third Party Content Supplier in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms; and

(c) releases each Third Party Content Supplier from any claim it may have otherwise had in connection with the Report, or the negotiation of, entry into, performance of, or termination of these Terms.

5. The End User acknowledges that any Third Party Supplier shall be entitled to plead the benefits conferred on it under clause 4, despite not being a party to these terms.
6. End User must not remove any copyright notices, trade marks, digital rights management information, other embedded information, disclaimers or limitations from the Report or authorise any person to do so.
7. End User acknowledges and agrees that Lotsearch and Third Party Content Suppliers retain ownership of all copyright, patent, design right (registered or unregistered), trade marks (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right in any Report or any other item, information or data included in or provided as part of a Report.
8. To the extent permitted by law and subject to paragraph 9, all implied terms, representations and warranties whether statutory or otherwise relating to the subject matter of these Terms other than as expressly set out in these Terms are excluded.
9. Subject to paragraph 6, Lotsearch excludes liability to End User for loss or damage of any kind, however caused, due to Lotsearch's negligence, breach of contract, breach of any law, in equity, under indemnities or otherwise, arising out of all acts, omissions and events whenever occurring.
10. Lotsearch acknowledges that if, under applicable State, Territory or Commonwealth law, End User is a consumer certain rights may be conferred on End User which cannot be excluded, restricted or modified. If so, and if that law applies to Lotsearch, then, Lotsearch's liability is limited to the greater of an amount equal to the cost of resupplying the Report and the maximum extent permitted under applicable laws.
11. Subject to paragraph 9, neither Lotsearch nor the End User is liable to the other for:
    (a) any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to the Report or these Terms; or
    (b) any loss of profit, loss of revenue, loss of interest, loss of data, loss of goodwill or loss of business opportunities, business interruption arising directly or indirectly out of or in relation to the Report or these Terms,

    irrespective of how that liability arises including in contract or tort, liability under indemnity or for any other common law, equitable or statutory cause of action or otherwise.
12. These Terms are subject to New South Wales law.

Annex E

Soil Screening Criteria

	Metals								TRH NEPM (2013)							BTEX			
	Arsenic	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury	TRH C6-C10 Fraction	TRH C6-C10 minus BTEX (F1)	TRH >C10-C16 Fraction	TRH >C10-C16 - Naphthalene (F2)	TRH >C16-C34 (F3)	TRH >C34-C40 (F4)	Napthalene	Benzene	Toluene	Ethylbenzene	Total Xylenes
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Reporting	1	0.3	0.5	0.5	1	0.5	2	0.05	25	25	25	25	90	120	0.1	0.1	0.1	0.1	0.3
EILs (NEPM 2013)	100				1100										170				
ESLs - Fine (NEPM 2013)										180		120	1300	5600		65	105	125	105
HIL A (NEPM 2013)	100	20	100	6000	300	400	7400	40											
HSL A - Soil Vapour Sand 0 - <1m (NEPM 2013)										45		110			3	0.5	160	55	40
HSL A - Soil Vapour Silt 0 - <1m (NEPM 2013)										40		230			4	0.6	390	NL	95
HSL A - Soil Vapour Clay 0 - <1m (NEPM 2013)										50		280			5	0.7	480	NL	110
Management Limits - Fine Soil (NEPM 2013)									*800*		*1,000*		*3,500*	*10,000*					
Management Limits - Coarse Soil (NEPM 2013)									*700*		*1,000*		*2,500*	*10,000*					
HSL A - Direct Contact (CRC Care 2011)									**4,400**		**3,300**		**4,500**	**6,300**	**1,400**	**100**	**14,000**	**4,500**	**12,000**
Sample ID	**Sampled Date**																		
S1 0.05-0.1	24/1/2023	**5**	<0.3	**22**	**23**	**63**	**22**	**130**	**0.05**	<25	<25	<25	<25	**200**	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S2 0.05-0.1	24/1/2023	**4**	<0.3	**12**	**13**	**150**	**8.4**	**160**	**0.06**	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S3 0.05-0.1	24/1/2023	**4**	<0.3	**18**	**20**	**43**	**21**	**240**	**0.07**	<25	<25	<25	<25	**110**	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S4 0.05-0.1	24/1/2023	**4**	<0.3	**21**	**24**	**36**	**24**	**94**	**0.08**	<25	<25	<25	<25	**120**	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S5 0.05-0.1	24/1/2023	**4**	<0.3	**8.0**	**11**	**40**	**6.6**	**200**	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S6 0.05-0.1	24/1/2023	**4**	**0.4**	**9.4**	**55**	**220**	**15**	**350**	**0.08**	<25	<25	<25	<25	**130**	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S7 0.05-0.1	24/1/2023	**4**	**0.8**	**13**	**37**	**110**	**16**	**410**	<0.05	<25	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S8 0.05-0.1	24/1/2023	**4**	<0.3	**11**	**13**	**88**	**11**	**180**	**0.06**	<25	<25	<25	<25	**140**	<120	<0.1	<0.1	<0.1	<0.1	<0.3
S9 0.05-0.1	24/1/2023	**4**	<0.3	**9.6**	**15**	**61**	**13**	**140**	<0.05	<25	<25	<25	<25	**320**	<120	**0.1**	<0.1	<0.1	<0.1	<0.3
S10 0.05-0.1	24/1/2023	**4**	**0.8**	**14**	**49**	**83**	**13**	**310**	**0.08**	<25	<25	<25	<25	**95**	<120	<0.1	<0.1	<0.1	<0.1	<0.3
Statistical Summary																			
Number of Results		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects		10	3	10	10	10	10	10	7	0	0	0	0	7	0	1	0	0	0	0
Minimum Detect		4	0.4	8	11	36	6.6	94	0.05	0	0	0	0	95	0	0.1	0	0	0	0
Maximum Detect		5	0.8	22	55	220	24	410	0.08	0	0	0	0	320	0	0.1	0	0	0	0
Average Concentration		4.1	0.66667	13.8	26	89.4	15	221.4	0.06857	-	-	-	-	159.286	-	0.1	-	-	-	-
Number of Guideline Exceedances		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soil Screening Criteria

	PAH						OCP												OPP	PCB
	Naphthalene	Benzo(a)pyrene	Carcinogenic PAHs, BaP TEQ <LOR=0	Carcinogenic PAHs, BaP TEQ <LOR=LOR	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	Total PAH	Aldrin	o,p'-DDE	o,p'-DDD	o,p'-DDT	Gamma Chlordane	Alpha Chlordane	Dieldrin	Alpha Endosulfan	Beta Endosulfan	Endrin	Heptachlor	Hexachlorobenzene (HCB)	Methoxychlor	Chlorpyrifos (Chlorpyrifos Ethyl)	Total PCBs (Arochlors)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Limit of Reporting	0.1	0.1	0.2	0.3	0.2	0.8	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.2	1
EILs (NEPM 2013)	170									180											
ESLs - Coarse/Fine (NEPM 2013)		1.4																			
HIL A (NEPM 2013)			3	3	3	300	6	240	240	240	50	50	6	270	270	10	6	10	300	160	1
HSL A - Direct Contact (CRC Care 2011)	**1,400**																				
Sample ID	**Sampled Date**																				
S1 0.05-0.1	24/1/2023	<0.1	**1.5**	**2.3**	**2.3**	**2.3**	**16**	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
S2 0.05-0.1	24/1/2023	<0.1	**0.8**	**1.1**	**1.1**	**1.1**	**7.9**	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
S3 0.05-0.1	24/1/2023	<0.1	**0.4**	**0.5**	**0.6**	**0.5**	**2.7**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
S4 0.05-0.1	24/1/2023	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
S5 0.05-0.1	24/1/2023	<0.1	**0.2**	**0.2**	**0.3**	**0.3**	**1.7**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
S6 0.05-0.1	24/1/2023	<0.1	**0.5**	**0.7**	**0.8**	**0.7**	**4.7**	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
S7 0.05-0.1	24/1/2023	<0.1	<0.1	<0.2	<0.3	<0.2	<0.8	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
S8 0.05-0.1	24/1/2023	<0.1	**0.6**	**0.7**	**0.8**	**0.8**	**5.5**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
S9 0.05-0.1	24/1/2023	**0.1**	**3.2**	**4.8**	**4.8**	**4.8**	**38**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.2	<1
S10 0.05-0.1	24/1/2023	<0.1	**0.3**	**0.4**	**0.5**	**0.5**	**3.1**	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Statistical Summary																					
Number of Results		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects		1	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Detect		0.1	0.2	0.2	0.3	0.3	1.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum Detect		0.1	3.2	4.8	4.8	4.8	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Average Concentration		0.1	0.9375	1.3375	1.4	1.375	9.95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Number of Guideline Exceedances		0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:

[1] The NEPM presents a cumulative HIL for DDD, DDE and DDT (240 mg/kg). Concentrations for each of these compounds are presented separately above and conservatively assessed against the HIL.

[2] The NEPM presents a cumulative HIL for Aldrin and Dieldrin (6 mg/kg). Concentrations for each of these compounds are presented separately above and conservatively assessed against the HIL.

[3] The NEPM presents onee HIL for Endosulfan (270 mg/kg). Concentrations for Alpha Endosulfan and Beta Endosulfan are presented separately above and conservatively assessed against the HIL.

Soil Screening Criteria

	LOR	Unit	Primary Sample	QA Sample	RPD
			S1 0.05-0.1	DUP	
Metals					
Arsenic	2	mg/kg	**5**	**4**	22.2
Cadmium	0.4	mg/kg	0.015	0.015	0.0
Chromium	5	mg/kg	**22**	**20**	9.5
Copper	5	mg/kg	**23**	**21**	9.1
Lead	5	mg/kg	**63**	**61**	3.2
Nickel	5	mg/kg	**22**	**21**	4.7
Zinc	5	mg/kg	**130**	**120**	8.0
Mercury	0.1	mg/kg	**0.05**	**0.05**	0.0

Notes

RPD = Relative Percentage Difference.

RPD assessment criteria were adopted in general accordance with NEPM Schedule B3 Section 3.5 (NEPC 2013). RPDs where both primary and duplicate results were < 2.5 times the LOR were not considered. RPDs where primary and/or duplicate results were >2.5 times the LOR were assessed based on a threshold of +/- 30%. Exceedence of this trheshold triggered consideration of associated data quality.

Water Screening Criteria

HUNTER ENVIRONMENTAL CONSULTING	LOR	RINS
Date		
Unit of Measure	mg/L	mg/L
Metals		
Arsenic	0.001	<0.001
Cadmium	0.0002	<0.0002
Chromium	0.001	<0.001
Copper	0.001	<0.001
Lead	0.001	<0.001
Nickel	0.001	<0.001
Zinc	0.005	<0.005
Mercury	0.0001	<0.0001

Gamma UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.114/02/2023 12:01:00 PM
From File	BAP UCL1.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

B(a)P

General Statistics

Total Number of Observations	10	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.1	Mean	1.09
Maximum	4.8	Median	0.6
SD	1.457	SD of logged Data	1.26
Coefficient of Variation	1.337	Skewness	2.224

Gamma GOF Test

A-D Test Statistic	0.367	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.202	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.275	Data appear Gamma Distributed at 5% Significance Level

Data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.853	k star (bias corrected MLE)	0.664
Theta hat (MLE)	1.278	Theta star (bias corrected MLE)	1.643
nu hat (MLE)	17.05	nu star (bias corrected)	13.27
MLE Mean (bias corrected)	1.09	MLE Sd (bias corrected)	1.338
		Approximate Chi Square Value (0.05)	6.076
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	5.254

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	2.381	95% Adjusted Gamma UCL (use when n<50)	2.754

Suggested UCL to Use

95% Adjusted Gamma UCL	2.754		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

HUNTER
ENVIRONMENTAL CONSULTING

Annex F

Photograph 1 – 36 Maitland Street – Front of dwelling facing Northeast

Photograph 2 – Rear of 36 Maitland Street = Shed and Eastern lot boundary.

Photograph 3 – Rear of 36 Maitland Street - Shed space and driveway facing North.

Photograph 4 – 38 Maitland Street – Front of dwelling facing Northeast

Photograph 5 – 38 Maitland Street = Rear of dwelling facing Southwest.

Photograph 6 – 38 Maitland Street - Rear shed facing Northeast

Photograph 7 – 38 Maitland Street – Pool and backyard space facing North

Photograph 8 – 38 Maitland Street – Backyard space facing South

Annex G

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Jake Duck
Client	HUNTER ENVIRONMENTAL CONSULTING PTY LTD
Address	PO BOX 3127 THORNTON NSW 2322
Telephone	61 2 49661844
Facsimile	(Not specified)
Email	jd@hunterenviro.com.au
Project	**E0032 (Muswellbrook)**
Order Number	**HEC0060**
Samples	22

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE242290 R0**
Date Received	27/1/2023
Date Reported	3/2/2023

COMMENTS

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

Sampels # 13,17,,20-22 : No trace asbestos fibres detected using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Dong LIANG
Metals/Inorganics Team Leader

Kamrul AHSAN
Senior Chemist

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Inorganic/Metals Chemist

Teresa NGUYEN
Organic Chemist

VOC's in Soil [AN433] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**110**	<45	**66**	**65**	<45
TRH C29-C36	mg/kg	45	**110**	<45	**58**	**78**	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**200**	<90	**110**	**120**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**220**	<110	**120**	**140**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**69**	<45	**73**	**220**	**56**
TRH C29-C36	mg/kg	45	**80**	<45	**91**	**140**	**51**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**130**	<90	**140**	**320**	**95**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**150**	<110	**160**	**360**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	**320**	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	0.2	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	1.3	0.6	0.1	<0.1	0.1
Anthracene	mg/kg	0.1	0.3	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	2.7	1.4	0.3	<0.1	0.3
Pyrene	mg/kg	0.1	2.5	1.2	0.3	<0.1	0.3
Benzo(a)anthracene	mg/kg	0.1	1.4	0.6	0.3	<0.1	0.1
Chrysene	mg/kg	0.1	1.3	0.6	0.2	<0.1	0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	1.9	0.9	0.4	<0.1	0.2
Benzo(k)fluoranthene	mg/kg	0.1	0.7	0.3	0.2	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	1.5	0.8	0.4	<0.1	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1.0	0.6	0.2	<0.1	0.1
Dibenzo(ah)anthracene	mg/kg	0.1	0.2	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.9	0.5	0.2	<0.1	0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	2.3	1.1	0.5	<0.2	0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	2.3	1.1	0.6	<0.3	0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	2.3	1.1	0.5	<0.2	0.3
Total PAH (18)	mg/kg	0.8	16	7.9	2.7	<0.8	1.7
Total PAH (NEPM/WHO 16)	mg/kg	0.8	16	7.9	2.7	<0.8	1.7

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	0.8	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4	<0.1
Phenanthrene	mg/kg	0.1	0.4	<0.1	0.4	5.1	0.2
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	1.1	<0.1
Fluoranthene	mg/kg	0.1	0.8	0.1	1.0	5.9	0.5
Pyrene	mg/kg	0.1	0.7	0.1	0.9	5.2	0.5
Benzo(a)anthracene	mg/kg	0.1	0.4	<0.1	0.4	3.2	0.3
Chrysene	mg/kg	0.1	0.4	<0.1	0.4	2.7	0.2
Benzo(b&j)fluoranthene	mg/kg	0.1	0.6	<0.1	0.7	3.6	0.4
Benzo(k)fluoranthene	mg/kg	0.1	0.2	<0.1	0.3	1.4	0.1
Benzo(a)pyrene	mg/kg	0.1	0.5	<0.1	0.6	3.2	0.3
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.4	<0.1	0.4	2.1	0.2
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.5	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.3	<0.1	0.4	1.8	0.2
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	0.7	<0.2	0.7	4.8	0.4
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	0.8	<0.3	0.8	4.8	0.5
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.7	<0.2	0.8	4.8	0.5
Total PAH (18)	mg/kg	0.8	4.7	<0.8	5.5	38	3.1
Total PAH (NEPM/WHO 16)	mg/kg	0.8	4.7	<0.8	5.5	37	3.1

OC Pesticides in Soil [AN420] Tested: 30/1/2023

PARAMETER	UOM	LOR	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Lindane (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
Aldrin	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
Delta BHC	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
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
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
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-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
Endrin aldehyde	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
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	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 CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 30/1/2023

PARAMETER	UOM	LOR	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 30/1/2023

PARAMETER	UOM	LOR	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
Arsenic, As	mg/kg	1	5	4	4	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	22	12	18	21	8.0
Copper, Cu	mg/kg	0.5	23	13	20	24	11
Lead, Pb	mg/kg	1	63	150	43	36	40
Nickel, Ni	mg/kg	0.5	22	8.4	21	24	6.6
Zinc, Zn	mg/kg	2	130	160	240	94	200

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
Arsenic, As	mg/kg	1	4	4	4	4	4
Cadmium, Cd	mg/kg	0.3	0.4	0.8	<0.3	<0.3	0.8
Chromium, Cr	mg/kg	0.5	9.4	13	11	9.6	14
Copper, Cu	mg/kg	0.5	55	37	13	15	49
Lead, Pb	mg/kg	1	220	110	88	61	83
Nickel, Ni	mg/kg	0.5	15	16	11	13	13
Zinc, Zn	mg/kg	2	350	410	180	140	310

PARAMETER	UOM	LOR	DUPS SOIL - 24/1/2023 SE242290.011
Arsenic, As	mg/kg	1	4
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	20
Copper, Cu	mg/kg	0.5	21
Lead, Pb	mg/kg	1	61
Nickel, Ni	mg/kg	0.5	21
Zinc, Zn	mg/kg	2	120

Mercury in Soil [AN312] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
Mercury	mg/kg	0.05	0.05	0.06	0.07	0.08	<0.05

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
Mercury	mg/kg	0.05	0.08	<0.05	0.06	<0.05	0.08

PARAMETER	UOM	LOR	DUPS SOIL - 24/1/2023 SE242290.011
Mercury	mg/kg	0.05	0.05

Moisture Content [AN002] Tested: 30/1/2023

PARAMETER	UOM	LOR	S1 0.05-0.1 SOIL - 24/1/2023 SE242290.001	S2 0.05-0.1 SOIL - 24/1/2023 SE242290.002	S3 0.05-0.1 SOIL - 24/1/2023 SE242290.003	S4 0.05-0.1 SOIL - 24/1/2023 SE242290.004	S5 0.05-0.1 SOIL - 24/1/2023 SE242290.005
% Moisture	%w/w	1	14.1	11.3	10.0	10.2	1.3

PARAMETER	UOM	LOR	S6 0.05-0.1 SOIL - 24/1/2023 SE242290.006	S7 0.05-0.1 SOIL - 24/1/2023 SE242290.007	S8 0.05-0.1 SOIL - 24/1/2023 SE242290.008	S9 0.05-0.1 SOIL - 24/1/2023 SE242290.009	S10 0.05-0.1 SOIL - 24/1/2023 SE242290.010
% Moisture	%w/w	1	11.8	6.9	10.8	9.2	12.3

PARAMETER	UOM	LOR	DUPS SOIL - 24/1/2023 SE242290.011
% Moisture	%w/w	1	14.1

Fibre ID in bulk materials [AS4964/AN602] Tested: 2/2/2023

PARAMETER	UOM	LOR	S1 (rear cladding) MATERIAL - 24/1/2023 SE242290.013	S2 (int. walls) MATERIAL - 24/1/2023 SE242290.014	S3 (int. laundry walls MATERIAL - 24/1/2023 SE242290.015	S5 (F. verandah eave MATERIAL - 24/1/2023 SE242290.016	S6 (rear ext eaves) MATERIAL - 24/1/2023 SE242290.017
Asbestos Detected	No unit	-	No	Yes	Yes	Yes	No

PARAMETER	UOM	LOR	S7 (int. kitchenwall) MATERIAL - 24/1/2023 SE242290.018	S9 (ext. eaves) MATERIAL - 24/1/2023 SE242290.020	S11 (ext toilet wall) MATERIAL - 24/1/2023 SE242290.021	S11 (int. laundry wall MATERIAL - 24/1/2023 SE242290.022
Asbestos Detected	No unit	-	Yes	No	No	No

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 31/1/2023

PARAMETER	UOM	LOR	RINS WATER - 24/1/2023 SE242290.012
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Copper	µg/L	1	<1
Chromium	µg/L	1	<1
Nickel	µg/L	1	<1
Lead	µg/L	1	<1
Zinc	µg/L	5	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 30/1/2023

PARAMETER	UOM	LOR	RINS WATER - 24/1/2023 SE242290.012
Mercury	mg/L	0.0001	<0.0001

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS /ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf). The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

FOOTNOTES

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

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

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

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

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

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

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

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

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

STATEMENT OF QA/QC PERFORMANCE

SE242290 R0

CLIENT DETAILS

Contact	Jake Duck
Client	HUNTER ENVIRONMENTAL CONSULTING PTY LTD
Address	PO BOX 3127 THORNTON NSW 2322
Telephone	61 2 49661844
Facsimile	(Not specified)
Email	jd@hunterenviro.com.au
Project	**E0032 (Muswellbrook)**
Order Number	**HEC0060**
Samples	22

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE242290 R0**
Date Received	27 Jan 2023
Date Reported	03 Feb 2023

COMMENTS

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

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

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

Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items
	TRH (Total Recoverable Hydrocarbons) in Soil	4 items
	Volatile Petroleum Hydrocarbons in Soil	1 item

SAMPLE SUMMARY

Sample counts by matrix	11 Soil, 1 Water, 9 M	Type of documentation received	COC
Date documentation received	27/1/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	23.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE242290 R0

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

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

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

Fibre ID in bulk materials

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 (rear cladding)	SE242290.013	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S2 (int. walls)	SE242290.014	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S3 (int. laundry walls)	SE242290.015	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S5 (F. verandah eave)	SE242290.016	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S6 (rear ext eaves)	SE242290.017	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S7 (int. kitchenwall)	SE242290.018	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S9 (ext. eaves)	SE242290.020	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S11 (ext toilet wall)	SE242290.021	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023
S11 (int. laundry wall)	SE242290.022	LB270348	24 Jan 2023	27 Jan 2023	24 Jan 2024	02 Feb 2023	24 Jan 2024	03 Feb 2023

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE242290.012	LB269946	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	31 Jan 2023

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S2 0.05-0.1	SE242290.002	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S3 0.05-0.1	SE242290.003	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S4 0.05-0.1	SE242290.004	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S5 0.05-0.1	SE242290.005	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S6 0.05-0.1	SE242290.006	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S7 0.05-0.1	SE242290.007	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S8 0.05-0.1	SE242290.008	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S9 0.05-0.1	SE242290.009	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
S10 0.05-0.1	SE242290.010	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023
DUPS	SE242290.011	LB270021	24 Jan 2023	27 Jan 2023	21 Feb 2023	30 Jan 2023	21 Feb 2023	02 Feb 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S2 0.05-0.1	SE242290.002	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S3 0.05-0.1	SE242290.003	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S5 0.05-0.1	SE242290.005	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S7 0.05-0.1	SE242290.007	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S8 0.05-0.1	SE242290.008	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023
DUPS	SE242290.011	LB270014	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	04 Feb 2023	01 Feb 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S2 0.05-0.1	SE242290.002	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S3 0.05-0.1	SE242290.003	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S5 0.05-0.1	SE242290.005	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S7 0.05-0.1	SE242290.007	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S8 0.05-0.1	SE242290.008	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	02 Feb 2023
S2 0.05-0.1	SE242290.002	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	02 Feb 2023
S3 0.05-0.1	SE242290.003	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	02 Feb 2023

HOLDING TIME SUMMARY

SE242290 R0

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

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

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

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S5 0.05-0.1	SE242290.005	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	02 Feb 2023
S7 0.05-0.1	SE242290.007	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	02 Feb 2023
S8 0.05-0.1	SE242290.008	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	02 Feb 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S2 0.05-0.1	SE242290.002	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S3 0.05-0.1	SE242290.003	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S5 0.05-0.1	SE242290.005	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S7 0.05-0.1	SE242290.007	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S8 0.05-0.1	SE242290.008	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S2 0.05-0.1	SE242290.002	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S3 0.05-0.1	SE242290.003	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S5 0.05-0.1	SE242290.005	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S7 0.05-0.1	SE242290.007	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023
S8 0.05-0.1	SE242290.008	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	03 Feb 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S2 0.05-0.1	SE242290.002	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S3 0.05-0.1	SE242290.003	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S4 0.05-0.1	SE242290.004	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S5 0.05-0.1	SE242290.005	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S6 0.05-0.1	SE242290.006	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S7 0.05-0.1	SE242290.007	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S8 0.05-0.1	SE242290.008	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S9 0.05-0.1	SE242290.009	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
S10 0.05-0.1	SE242290.010	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023
DUPS	SE242290.011	LB270019	24 Jan 2023	27 Jan 2023	23 Jul 2023	30 Jan 2023	23 Jul 2023	02 Feb 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
RINS	SE242290.012	LB270054	24 Jan 2023	27 Jan 2023	23 Jul 2023	31 Jan 2023	23 Jul 2023	01 Feb 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S2 0.05-0.1	SE242290.002	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S3 0.05-0.1	SE242290.003	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S5 0.05-0.1	SE242290.005	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S7 0.05-0.1	SE242290.007	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S8 0.05-0.1	SE242290.008	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023

HOLDING TIME SUMMARY

SE242290 R0

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

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S9 0.05-0.1	SE242290.009	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270012	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	11 Mar 2023	01 Feb 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S2 0.05-0.1	SE242290.002	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S3 0.05-0.1	SE242290.003	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S5 0.05-0.1	SE242290.005	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S7 0.05-0.1	SE242290.007	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S8 0.05-0.1	SE242290.008	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
S1 0.05-0.1	SE242290.001	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S2 0.05-0.1	SE242290.002	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S3 0.05-0.1	SE242290.003	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S4 0.05-0.1	SE242290.004	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S5 0.05-0.1	SE242290.005	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S6 0.05-0.1	SE242290.006	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S7 0.05-0.1	SE242290.007	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S8 0.05-0.1	SE242290.008	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S9 0.05-0.1	SE242290.009	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023
S10 0.05-0.1	SE242290.010	LB270015	24 Jan 2023	27 Jan 2023	07 Feb 2023	30 Jan 2023	07 Feb 2023	01 Feb 2023

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

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

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	S3 0.05-0.1	SE242290.003	%	60 - 130%	78
	S5 0.05-0.1	SE242290.005	%	60 - 130%	73
	S8 0.05-0.1	SE242290.008	%	60 - 130%	74
	S9 0.05-0.1	SE242290.009	%	60 - 130%	79

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	S3 0.05-0.1	SE242290.003	%	60 - 130%	80
	S5 0.05-0.1	SE242290.005	%	60 - 130%	81
	S8 0.05-0.1	SE242290.008	%	60 - 130%	80
	S9 0.05-0.1	SE242290.009	%	60 - 130%	81
d14-p-terphenyl (Surrogate)	S3 0.05-0.1	SE242290.003	%	60 - 130%	88
	S5 0.05-0.1	SE242290.005	%	60 - 130%	90
	S8 0.05-0.1	SE242290.008	%	60 - 130%	90
	S9 0.05-0.1	SE242290.009	%	60 - 130%	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	S1 0.05-0.1	SE242290.001	%	70 - 130%	81
	S2 0.05-0.1	SE242290.002	%	70 - 130%	80
	S3 0.05-0.1	SE242290.003	%	70 - 130%	80
	S4 0.05-0.1	SE242290.004	%	70 - 130%	78
	S5 0.05-0.1	SE242290.005	%	70 - 130%	81
	S6 0.05-0.1	SE242290.006	%	70 - 130%	78
	S7 0.05-0.1	SE242290.007	%	70 - 130%	80
	S8 0.05-0.1	SE242290.008	%	70 - 130%	80
	S9 0.05-0.1	SE242290.009	%	70 - 130%	81
	S10 0.05-0.1	SE242290.010	%	70 - 130%	85
d14-p-terphenyl (Surrogate)	S1 0.05-0.1	SE242290.001	%	70 - 130%	90
	S2 0.05-0.1	SE242290.002	%	70 - 130%	90
	S3 0.05-0.1	SE242290.003	%	70 - 130%	88
	S4 0.05-0.1	SE242290.004	%	70 - 130%	88
	S5 0.05-0.1	SE242290.005	%	70 - 130%	90
	S6 0.05-0.1	SE242290.006	%	70 - 130%	88
	S7 0.05-0.1	SE242290.007	%	70 - 130%	88
	S8 0.05-0.1	SE242290.008	%	70 - 130%	90
	S9 0.05-0.1	SE242290.009	%	70 - 130%	92
	S10 0.05-0.1	SE242290.010	%	70 - 130%	91
d5-nitrobenzene (Surrogate)	S1 0.05-0.1	SE242290.001	%	70 - 130%	77
	S2 0.05-0.1	SE242290.002	%	70 - 130%	80
	S3 0.05-0.1	SE242290.003	%	70 - 130%	82
	S4 0.05-0.1	SE242290.004	%	70 - 130%	76
	S5 0.05-0.1	SE242290.005	%	70 - 130%	81
	S6 0.05-0.1	SE242290.006	%	70 - 130%	78
	S7 0.05-0.1	SE242290.007	%	70 - 130%	82
	S8 0.05-0.1	SE242290.008	%	70 - 130%	78
	S9 0.05-0.1	SE242290.009	%	70 - 130%	79
	S10 0.05-0.1	SE242290.010	%	70 - 130%	92

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	S3 0.05-0.1	SE242290.003	%	60 - 130%	77
	S5 0.05-0.1	SE242290.005	%	60 - 130%	71
	S8 0.05-0.1	SE242290.008	%	60 - 130%	73
	S9 0.05-0.1	SE242290.009	%	60 - 130%	78

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S1 0.05-0.1	SE242290.001	%	60 - 130%	73
	S2 0.05-0.1	SE242290.002	%	60 - 130%	80
	S3 0.05-0.1	SE242290.003	%	60 - 130%	76
	S4 0.05-0.1	SE242290.004	%	60 - 130%	75
	S5 0.05-0.1	SE242290.005	%	60 - 130%	66

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

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

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S6 0.05-0.1	SE242290.006	%	60 - 130%	73
	S7 0.05-0.1	SE242290.007	%	60 - 130%	77
	S8 0.05-0.1	SE242290.008	%	60 - 130%	69
	S9 0.05-0.1	SE242290.009	%	60 - 130%	68
	S10 0.05-0.1	SE242290.010	%	60 - 130%	72
d4-1,2-dichloroethane (Surrogate)	S1 0.05-0.1	SE242290.001	%	60 - 130%	71
	S2 0.05-0.1	SE242290.002	%	60 - 130%	78
	S3 0.05-0.1	SE242290.003	%	60 - 130%	78
	S4 0.05-0.1	SE242290.004	%	60 - 130%	74
	S5 0.05-0.1	SE242290.005	%	60 - 130%	71
	S6 0.05-0.1	SE242290.006	%	60 - 130%	77
	S7 0.05-0.1	SE242290.007	%	60 - 130%	84
	S8 0.05-0.1	SE242290.008	%	60 - 130%	76
	S9 0.05-0.1	SE242290.009	%	60 - 130%	75
	S10 0.05-0.1	SE242290.010	%	60 - 130%	79
d8-toluene (Surrogate)	S1 0.05-0.1	SE242290.001	%	60 - 130%	70
	S2 0.05-0.1	SE242290.002	%	60 - 130%	89
	S3 0.05-0.1	SE242290.003	%	60 - 130%	88
	S4 0.05-0.1	SE242290.004	%	60 - 130%	82
	S5 0.05-0.1	SE242290.005	%	60 - 130%	76
	S6 0.05-0.1	SE242290.006	%	60 - 130%	82
	S7 0.05-0.1	SE242290.007	%	60 - 130%	88
	S8 0.05-0.1	SE242290.008	%	60 - 130%	78
	S9 0.05-0.1	SE242290.009	%	60 - 130%	77
	S10 0.05-0.1	SE242290.010	%	60 - 130%	80

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	S1 0.05-0.1	SE242290.001	%	60 - 130%	73
	S2 0.05-0.1	SE242290.002	%	60 - 130%	80
	S3 0.05-0.1	SE242290.003	%	60 - 130%	76
	S4 0.05-0.1	SE242290.004	%	60 - 130%	75
	S5 0.05-0.1	SE242290.005	%	60 - 130%	66
	S6 0.05-0.1	SE242290.006	%	60 - 130%	73
	S7 0.05-0.1	SE242290.007	%	60 - 130%	77
	S8 0.05-0.1	SE242290.008	%	60 - 130%	69
	S9 0.05-0.1	SE242290.009	%	60 - 130%	68
	S10 0.05-0.1	SE242290.010	%	60 - 130%	72
d4-1,2-dichloroethane (Surrogate)	S1 0.05-0.1	SE242290.001	%	60 - 130%	71
	S2 0.05-0.1	SE242290.002	%	60 - 130%	78
	S3 0.05-0.1	SE242290.003	%	60 - 130%	78
	S4 0.05-0.1	SE242290.004	%	60 - 130%	74
	S5 0.05-0.1	SE242290.005	%	60 - 130%	71
	S6 0.05-0.1	SE242290.006	%	60 - 130%	77
	S7 0.05-0.1	SE242290.007	%	60 - 130%	84
	S8 0.05-0.1	SE242290.008	%	60 - 130%	76
	S9 0.05-0.1	SE242290.009	%	60 - 130%	75
	S10 0.05-0.1	SE242290.010	%	60 - 130%	79
d8-toluene (Surrogate)	S1 0.05-0.1	SE242290.001	%	60 - 130%	70
	S2 0.05-0.1	SE242290.002	%	60 - 130%	89
	S3 0.05-0.1	SE242290.003	%	60 - 130%	88
	S4 0.05-0.1	SE242290.004	%	60 - 130%	82
	S5 0.05-0.1	SE242290.005	%	60 - 130%	76
	S6 0.05-0.1	SE242290.006	%	60 - 130%	82
	S7 0.05-0.1	SE242290.007	%	60 - 130%	88
	S8 0.05-0.1	SE242290.008	%	60 - 130%	78
	S9 0.05-0.1	SE242290.009	%	60 - 130%	77
	S10 0.05-0.1	SE242290.010	%	60 - 130%	80

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

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

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB269946.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB270021.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270012.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	73

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270012.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	81
		d14-p-terphenyl (Surrogate)	%	-	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB270012.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270012.001		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	81
		2-fluorobiphenyl (Surrogate)	%	-	81
		d14-p-terphenyl (Surrogate)	%	-	92

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB270012.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	71

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB270019.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB270054.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5
LB270054.025	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB270012.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

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

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

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270015.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	90
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	82
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB270015.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	90

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

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

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

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

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

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242313.005	LB269946.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	67

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270021.014	Mercury	mg/kg	0.05	0.08	<0.05	113	44
SE242358.004	LB270021.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270014.011	% Moisture	%w/w	1	12.3	11.8	38	4
SE242358.004	LB270014.021	% Moisture	%w/w	1	18.9	16.1	36	16

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242358.004	LB270012.023		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.11	30	4

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242358.004	LB270012.023	Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Ethion	mg/kg	0.2	<0.2	<0.2	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0

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

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

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

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

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

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242358.004	LB270012.023		Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270012.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	0.2	0.3	69	24
			Anthracene	mg/kg	0.1	<0.1	<0.1	195	0
			Fluoranthene	mg/kg	0.1	0.5	0.6	48	14
			Pyrene	mg/kg	0.1	0.5	0.6	49	14
			Benzo(a)anthracene	mg/kg	0.1	0.3	0.3	66	11
			Chrysene	mg/kg	0.1	0.2	0.3	68	13
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.4	0.4	55	10
			Benzo(k)fluoranthene	mg/kg	0.1	0.1	0.1	98	2
			Benzo(a)pyrene	mg/kg	0.1	0.3	0.4	60	8
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.3	70	5
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.2	0.2	72	5
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	0.4	0.5	54	8
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	0.5	0.5	50	7
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	0.5	0.6	64	7
			Total PAH (18)	mg/kg	0.8	3.1	3.4	33	12
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	30	7
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	4
SE242358.004	LB270012.023		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	0.2	0.2	91	4
			1-methylnaphthalene	mg/kg	0.1	0.1	0.1	107	9
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	151	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	64	6
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR

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

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

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

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

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

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242358.004	LB270012.023		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	30	4

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270019.014	Arsenic, As	mg/kg	1	4	4	54	14
		Cadmium, Cd	mg/kg	0.3	0.8	0.8	67	5
		Chromium, Cr	mg/kg	0.5	14	14	34	0
		Copper, Cu	mg/kg	0.5	49	49	31	0
		Nickel, Ni	mg/kg	0.5	13	12	34	4
		Lead, Pb	mg/kg	1	83	79	31	5
		Zinc, Zn	mg/kg	2	310	300	31	1
SE242358.004	LB270019.024	Arsenic, As	mg/kg	1	2	3	71	64
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	5.4	8.4	37	43 ②
		Copper, Cu	mg/kg	0.5	7.3	6.9	37	5
		Nickel, Ni	mg/kg	0.5	2.6	4.3	45	49 ②
		Lead, Pb	mg/kg	1	6	9	43	32
		Zinc, Zn	mg/kg	2	26	26	38	2

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242202.010	LB270054.014	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0
SE242312.017	LB270054.028	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0
SE242343.019	LB270054.035	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270012.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	56	58	109	4
			TRH C29-C36	mg/kg	45	51	53	116	3
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	110	131	1
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16	mg/kg	25	<25	<25	200	0

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

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

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

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270012.014	TRH F Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	95	99	123	4
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE242358.004	LB270012.023		TRH C10-C14	mg/kg	20	59	62	63	4
			TRH C15-C28	mg/kg	45	240	230	49	3
			TRH C29-C36	mg/kg	45	<45	55	123	20
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	300	350	64	15
			TRH >C10-C40 Total (F bands)	mg/kg	210	330	320	94	2
		TRH F Bands	TRH >C10-C16	mg/kg	25	95	81	58	16
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	95	81	58	16
			TRH >C16-C34 (F3)	mg/kg	90	230	240	68	3
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270015.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.9	50	0
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.9	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	6.9	50	5
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE242358.004	LB270015.023	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.0	50	11
			d8-toluene (Surrogate)	mg/kg	-	8.3	8.1	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	8.1	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE242290.010	LB270015.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.9	30	0
			d8-toluene (Surrogate)	mg/kg	-	8.0	7.9	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	6.9	30	5
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE242358.004	LB270015.023		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.7	7.0	30	11
			d8-toluene (Surrogate)	mg/kg	-	8.3	8.1	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.9	8.1	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

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

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270021.002	Mercury	mg/kg	0.05	0.22	0.2	70 - 130	108

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270012.002		Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	68
		Heptachlor	mg/kg	0.1	0.1	0.2	60 - 140	71
		Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	68
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	67
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	81
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	68
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.15	40 - 130	75

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270012.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.6	2	60 - 140	80
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	88
		Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	72
		Ethion	mg/kg	0.2	1.5	2	60 - 140	73
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	80
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270012.002		Naphthalene	mg/kg	0.1	3.7	4	60 - 140	94
		Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	94
		Acenaphthene	mg/kg	0.1	3.7	4	60 - 140	92
		Phenanthrene	mg/kg	0.1	3.6	4	60 - 140	90
		Anthracene	mg/kg	0.1	3.6	4	60 - 140	90
		Fluoranthene	mg/kg	0.1	3.8	4	60 - 140	96
		Pyrene	mg/kg	0.1	3.8	4	60 - 140	95
		Benzo(a)pyrene	mg/kg	0.1	4.0	4	60 - 140	100
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	79
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	80
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	89

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270012.002	Arochlor 1260	mg/kg	0.2	0.3	0.4	60 - 140	82

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270019.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	102
	Cadmium, Cd	mg/kg	0.3	3.6	4.81	70 - 130	74
	Chromium, Cr	mg/kg	0.5	35	38.31	80 - 120	90
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	96
	Lead, Pb	mg/kg	1	89	89.9	80 - 120	99
	Zinc, Zn	mg/kg	2	260	273	80 - 120	95

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270054.002	Arsenic	µg/L	1	22	20	80 - 120	110
	Cadmium	µg/L	0.1	21	20	80 - 120	106
	Chromium	µg/L	1	20	20	80 - 120	102
	Copper	µg/L	1	21	20	80 - 120	106
	Lead	µg/L	1	19	20	80 - 120	95
	Nickel	µg/L	1	21	20	80 - 120	105
	Zinc	µg/L	5	21	20	80 - 120	106
LB270054.026	Arsenic	µg/L	1	22	20	80 - 120	110
	Cadmium	µg/L	0.1	21	20	80 - 120	104

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

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

Trace Metals (Dissolved) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN318

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270054.026		Chromium	µg/L	1	20	20	80 - 120	101
		Copper	µg/L	1	21	20	80 - 120	105
		Lead	µg/L	1	19	20	80 - 120	93
		Nickel	µg/L	1	21	20	80 - 120	103
		Zinc	µg/L	5	22	20	80 - 120	108

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270012.002		TRH C10-C14	mg/kg	20	49	40	60 - 140	123
		TRH C15-C28	mg/kg	45	49	40	60 - 140	123
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	94
	TRH F Bands	TRH >C10-C16	mg/kg	25	50	40	60 - 140	124
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	113
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	88

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270015.002	Monocyclic	Benzene	mg/kg	0.1	4.7	5	60 - 140	94
	Aromatic	Toluene	mg/kg	0.1	4.8	5	60 - 140	97
		Ethylbenzene	mg/kg	0.1	4.8	5	60 - 140	96
		m/p-xylene	mg/kg	0.2	8.9	10	60 - 140	89
		o-xylene	mg/kg	0.1	4.8	5	60 - 140	96
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		d8-toluene (Surrogate)	mg/kg	-	10.3	10	70 - 130	103
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.4	10	70 - 130	104

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB270015.002		TRH C6-C10	mg/kg	25	98	92.5	60 - 140	106
		TRH C6-C9	mg/kg	20	88	80	60 - 140	110
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.4	10	70 - 130	94
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.4	10	70 - 130	104
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	70	62.5	60 - 140	112

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

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

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242275.016	LB269946.004	Mercury	mg/L	0.0001	0.0023	<0.0001	0.008	117

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270021.004	Mercury	mg/kg	0.05	0.29	0.05	0.2	117

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.003	LB270012.025	Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.1	<0.1	0.2	72
		Heptachlor	mg/kg	0.1	0.1	<0.1	0.2	72
		Aldrin	mg/kg	0.1	0.1	<0.1	0.2	70
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	73
		Endrin	mg/kg	0.2	<0.2	<0.2	0.2	84
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	62
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
		Total OC VIC EPA	mg/kg	1	<1	<1	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.12	-	74

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270012.004	Naphthalene	mg/kg	0.1	4.3	<0.1	4	107
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.7	0.2	4	111
		Acenaphthene	mg/kg	0.1	4.3	<0.1	4	106
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	5.2	1.3	4	98
		Anthracene	mg/kg	0.1	4.5	0.3	4	104
		Fluoranthene	mg/kg	0.1	6.9	2.7	4	104
		Pyrene	mg/kg	0.1	6.4	2.5	4	97
		Benzo(a)anthracene	mg/kg	0.1	1.3	1.4	-	-
		Chrysene	mg/kg	0.1	1.2	1.3	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	1.7	1.9	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	0.7	0.7	-	-
		Benzo(a)pyrene	mg/kg	0.1	5.9	1.5	4	109
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1.0	1.0	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	0.2	0.2	-	-

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270012.004		Benzo(ghi)perylene	mg/kg	0.1	0.9	0.9	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	6.6	2.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	6.6	2.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	6.6	2.3	-	-
			Total PAH (18)	mg/kg	0.8	49	16	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	84
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	81
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	90

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.003	LB270012.025		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	92
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0	-	74

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270019.004	Arsenic, As	mg/kg	1	44	5	50	79
		Cadmium, Cd	mg/kg	0.3	41	<0.3	50	82
		Chromium, Cr	mg/kg	0.5	59	22	50	74
		Copper, Cu	mg/kg	0.5	62	23	50	78
		Nickel, Ni	mg/kg	0.5	59	22	50	74
		Lead, Pb	mg/kg	1	92	63	50	59 ④
		Zinc, Zn	mg/kg	2	150	130	50	34 ④

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242202.001	LB270054.004	Arsenic	µg/L	1	23	<1	20	114
		Cadmium	µg/L	0.1	21	<0.1	20	104
		Chromium	µg/L	1	21	<1	20	104
		Copper	µg/L	1	37	17	20	102
		Lead	µg/L	1	20	<1	20	97
		Nickel	µg/L	1	27	6	20	102
		Zinc	µg/L	5	40	19	20	106
SE242333.053	LB270054.030	Arsenic	µg/L	1	22	-0.027	20	108
		Cadmium	µg/L	0.1	20	0.002	20	102
		Chromium	µg/L	1	20	0.202	20	101
		Copper	µg/L	1	21	0.061	20	104
		Lead	µg/L	1	19	-0.001	20	94
		Nickel	µg/L	1	21	0.195	20	104
		Zinc	µg/L	5	23	1.199	20	108

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270012.004		TRH C10-C14	mg/kg	20	62	<20	40	141 ⑤
			TRH C15-C28	mg/kg	45	190	110	40	179 ⑤
			TRH C29-C36	mg/kg	45	160	110	40	123
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	410	220	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	330	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	67	<25	40	145 ⑤
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	67	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	260	200	40	154 ⑤
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

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

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

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270015.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.0	<0.1	5	79
			Toluene	mg/kg	0.1	4.2	<0.1	5	85
			Ethylbenzene	mg/kg	0.1	4.2	<0.1	5	83
			m/p-xylene	mg/kg	0.2	7.8	<0.2	10	78
			o-xylene	mg/kg	0.1	4.4	<0.1	5	87
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.1	10	75
			d8-toluene (Surrogate)	mg/kg	-	8.5	7.0	10	85
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	7.3	10	94
		Totals	Total BTEX*	mg/kg	0.6	25	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	12	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE242290.001	LB270015.004		TRH C6-C10	mg/kg	25	110	<25	92.5	119
			TRH C6-C9	mg/kg	20	110	<20	80	131
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.1	10	75
			d8-toluene (Surrogate)	mg/kg	-	8.5	7.0	10	85
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	7.3	-	94
		VPH F Bands	Benzene (F0)	mg/kg	0.1	4.0	<0.1	-	-
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	88	<25	62.5	137 ④

MATRIX SPIKE DUPLICATES

SE242290 R0

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

CHAIN OF CUSTODY & ANALYSIS REQUEST

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

Company Name:	Hunter Enviro	Project Name/No:	E0032 (muswellbrook)
Address:	3/62 Sandringham Avenue Thornton 2322	Purchase Order No:	HEC00060
		Results Required By:	Std TA
		Telephone:	Jake 0499160449 / Fletcher 0409334100
Contact Name:	Jake Duck	Facsimile:	
		Email Results:	jd@hunterenviro.com.au fh@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	CL2
S1 0.05-0.1	24/1	1		X		-		X	
S2 0.05-0.1	↓	2		↓		↓		X	
S3 0.05-0.1		3					X		
S4 0.05-0.1		4					-	X	
S5 0.05-0.1		5					X		
S6 0.05-0.1		6						X	
S7 0.05-0.1		7						X	
S8 0.05-0.1		8					X		
S9 0.05-0.1		9					X		
S10 0.05-0.1	↓	10		↓		↓		X	

SGS EHS Sydney COC
SE242290

Relinquished By:	Date/Time: 25/1/23	Received By:	Date/Time 27/1/23 @ 10:20
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: (Yes)/ No	Temperature: Ambient / (Chilled)	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		

SGS

CHAIN OF CUSTODY & ANALYSIS REQUEST

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

Company Name:	Hunter Enviro	Project Name/No:	E0032 (Muswellbrook)
Address:	3/62 Sandringham Avenue Thornton 2322	Purchase Order No:	HEC0060
		Results Required By:	Std TA
		Telephone:	Jake 0499160449 / Fletcher 0409334100
Contact Name:	Jake Duck	Facsimile:	
		Email Results:	id@hunterenviro.com.au fh@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	CL2	ASB ID Building mat	HOLD
DUP	25/1	11		X		1			X		
RINS		12	X			1			X		
S1 (rear claddings)		13								X	
S2 (int. walls)		14								X	
S3 (int. laundry wall)		15								X	
S4 (int wall 2)										X	X
S5 (F. verandah eave)		16								X	
S6 (rear ext eaves)		17								X	
S7 (int. kitchen wall)		18								X	
S8 (F. verandah int. cladding)		19								X	

Relinquished By:	Date/Time: 25/1/23	Received By:	Date/Time 27/1/23 @ 10:20
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: (Yes) No	Temperature: Ambient / (Chilled)	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		

CHAIN OF CUSTODY & ANALYSIS REQUEST

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

Company Name:	Hunter Enviro	Project Name/No:	E0032 (muswellbrook)
Address:	3/62 Sandringham Avenue Thornton 2322	Purchase Order No:	HEC0060.
		Results Required By:	Std TA.
		Telephone:	Jake 0499160449 / Fletcher 0409334100
Contact Name:	Jake Duck	Facsimile:	
		Email Results:	jd@hunterenviro.com.au fh@hunterenviro.com.au

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	CL17	CL10	CL2	Building material ID	HOLD.
S9 (ext. eaves)	24/1	20				1				X	
S10 (int. bath)	↓					1					X
S11 (Ext toilet wall)		21				1				X	
S12 (int. laundry wall)	↓	22				1				X	

Relinquished By:	Date/Time: 25/1/23	Received By:	Date/Time 27/1/23 @ 10:20
Relinquished By:	Date/Time:	Received By:	Date/Time
Samples Intact: (Yes) No	Temperature: Ambient / (Chilled)	Sample Cooler Sealed: Yes/ No	Laboratory Quotation No:
	Comments:		