

Statement of Environmental Effects
Cowal Gold Operations Accommodation Village

VOLUME 4 – APPENDIX N TO P

Prepared for Evolution Mining (Cowal) Pty Limited
April 2021

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Appendix N

Preliminary site investigation

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Preliminary Site Investigation

Cowal Gold Operations Accommodation Village, Boundary Street, West Wyalong

Prepared for Evolution Mining (Cowal) Pty Limited
March 2021

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Preliminary Site Investigation

Cowal Gold Operations Accommodation Village, Boundary Street, West Wyalong

Report Number

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Client

Evolution Mining (Cowal) Pty Limited

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v2 Final

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15 March 2021

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15 March 2021

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Executive Summary

ES1 Introduction

Evolution Mining (Cowal) Pty Limited (Evolution) proposes to construct and operate an accommodation village (the project) on vacant land comprising the whole of Lot 7044 deposited plan (DP) 1115128 and a portion of Lot 2 DP 1239669 (the site), located on Boundary Street, West Wyalong.

EMM Consulting Pty Limited (EMM) has been engaged by Evolution to prepare a statement of environmental effects (SEE) and accompanying development application (DA) for the project under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). This preliminary site investigation (PSI) has been prepared by EMM in support of the SEE for the project.

The objective of the PSI was to assess whether historical or present activities have the potential to cause, or have caused, contamination that may impact on the land use suitability for the project. This was undertaken by reviewing site history, the physical setting and general conditions of the project footprint and surrounding areas.

ES2 Findings

The site is devoid of built structures and located in a generally rural residential area. Residential properties occur to the north and west and vacant land to the south and east. Although historically cleared of much of the native vegetation, the site at the ground surface, has remained largely undeveloped, except for the former use of part of the site as a temporary accommodation village for an approximate 15-month period in 2005 and 2006. Several stockpiles were observed across the site, including one large stockpile in the central portion of the site and a number of smaller stockpiles mostly located within the south-western portion of the site. A single fragment of potential asbestos containing material (ACM) was observed within one of the smaller stockpiles.

One current and several historical exploration titles are held over the site and in the surrounding area, however no evidence of significant surficial ground disturbance was observed on aerial imagery or during the site inspection, with the exception of the construction, operation and subsequent demolition of the former Barrick Australia Pty Limited (Barrick) accommodation village. Notwithstanding this, evidence obtained during the preparation of this PSI indicates the site may be subject to subsidence and there is a potential for historic mining voids to be present that may have been backfilled within the site.

ES3 Conclusions and recommendations

Based on the findings of this PSI, potential sources of contamination at the site were primarily associated with the presence of stockpiled material of unknown origin, historical mining activities and associated potential filling of voids underlying the site.

Potentially complete contaminant source-pathway-receptor (S-P-R) linkages were identified for construction and maintenance workers associated with development of the site and future site users (workers and visitors to the site). Down-gradient users of surface and groundwater were also identified to have potentially complete S-P-R linkages, as were terrestrial and aquatic ecosystems.

Based on the information obtained during the preparation of this PSI, it is recommended that intrusive site investigations should be undertaken to evaluate ground conditions associated with potential historical filling and the presence of waste stockpiles. The work could be conducted in conjunction with a geotechnical investigation to evaluate potential ground subsidence issues and further inform the development plans for the site. Furthermore, it is recommended that a construction environmental management plan (CEMP), including an unexpected finds protocol, is prepared and implemented to manage any contamination which may be encountered during development works at the site.

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Abbreviations

Abbreviation	Term
ASS	Acid Sulfate Soil
CGO	Cowal Gold Operations
CLM Act	*Contaminated Land Management Act 1997* (NSW)
CoPC	Contaminants of potential concern
CSM	Conceptual site model
DA	Development application
DP	Deposited plan
EMM	EMM Consulting Pty Ltd
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	Environment Protection Authority
EPL	Environment Protection Licence
GDE	Groundwater dependant ecosystems
Km	Kilometre
LEP	Local Environmental Plan
LGA	Local Government Area
m	Metre
mm	Millimetres
m bgl	Metres below ground level
PFAS	Per- and polyfluoroalkyl substances
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
PSI	Preliminary Site Investigation
SEE	Statement of Environmental Effects
SEPP 55	State Environment Planning Policy No 55 – Remediation of Land
m AHD	Metres Australian Height Datum
NEPC	National Environment Protection Council
NEPM	National Environmental Protection (Assessment of Site Contamination) Measure, as amended (2013)
NSW	New South Wales

1 Introduction

1.1 Background

Evolution Mining (Cowal) Pty Limited (Evolution) proposes to construct and operate an accommodation village (the project) on vacant land comprising the whole of Lot 7044 deposited plan (DP) 1115128 and a portion of Lot 2 DP 1239669 (the site), located immediately west of Boundary Street, West Wyalong (see Figure 1.1 and Figure 1.2).

EMM Consulting Pty Limited (EMM) has been engaged by Evolution to prepare a statement of environmental effects (SEE) and accompanying development application (DA) for the project under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). This preliminary site investigation (PSI) has been prepared by EMM to inform the SEE and DA for the project.

1.2 Project description

The project will be located within the Bland Shire Local Government Area (LGA) and will be considered as a multi-dwelling residential development under the *Bland Local Environmental Plan 2011* (LEP) and *Bland Shire Development Control Plan 2012* (DCP).

The village is being developed to house the anticipated workforce associated with the construction and operation of the Cowal Gold Operations (CGO) Underground Development Project, located approximately 38 kilometres (km) north-east of West Wyalong (see Figure 1.1). The CGO Underground Development Project is currently the subject of a State significant development (SSD) application (SSD 10367), under section 4.38 of the EP&A Act.

The project conceptually comprises the following key components:

- accommodation capacity for up to 176 people total supporting the CGO Underground Development Project, including:
  - temporary construction workforce accommodation modules to house 96 people;
  - semi-permanent operational workforce accommodation modules to house 72 people;
  - semi-permanent accommodation modules to house 8 people, with facilities which are Commonwealth *Disability Discrimination Act 1992* (DDA) compliant;
- use of upgraded existing access points and on-site roads;
- administration buildings;
- communal facilities, including:
  - laundry units;
  - communal dining and kitchen building;
  - outdoor eating areas;
  - first aid and nursing room;
  - prayer room;

  - quiet room;
  - gymnasium;
  - multipurpose outdoor court; and
  - running track;
- undercover bus shelter and bus parking spaces;
- light vehicle car parking;
- fencing and lighting;
- reticulated services; and
- landscaping.

The village components will be modular in design with different layouts dependent on the workforce (construction, operational and accessible) supporting the CGO Underground Development Project. The development will be staged, with the construction workforce modules being constructed first to ensure this area of the village is ready to house the construction workforce as soon as possible. The operational workforce modules, including accessible modules, will be completed as soon as possible thereafter.

Approval is sought for all stages of development as part of the SEE and DA. Construction of the accommodation modules is expected to take approximately eight months total. Construction of additional amenities/facilities may take up to a further three years, post removal of construction accommodation modules. Minor earthworks will be required for site establishment activities, including vegetation clearing and grubbing, ground levelling and trenching for service installation. Any excavated topsoil will be stockpiled and reused on site where possible.

Appropriate security measures such as fencing, gates, cameras and night lighting will be installed. Site landscaping will be undertaken to increase visual amenity consistent with the surrounding neighbourhood and will incorporate water sensitive urban design practices. This includes maintaining existing native vegetation wherever possible.

1.3 Site description

The site is located between Boundary Street and Aleena Street in West Wyalong, in central west New South Wales (NSW), which is located approximately 360 km west of Sydney (see Figure 1.1). The site is approximately 2.8 hectares (ha). Under the Bland LEP (Land Zoning Map – Sheet LZN_007F), the site is zoned as Zone R1 General Residential.

The site is located on vacant Freehold land comprising the whole of Lot 7044 DP1115128 and a portion of Lot 2 DP1239669 (see Figure 1.2), held by the West Wyalong Local Aboriginal Land Council (LALC) (subject to determination of native title). A native title claim (NN2020/007) was lodged on 21 August 2020 by the West Wyalong LALC over part of the site. This claim was yet to be determined at the time of writing.

The site was formerly the location of the Barrick Australia Pty Limited (Barrick) CGO accommodation village, constructed in 2004 for use as a temporary residential village to support employees working at the CGO. The Barrick accommodation village was demolished between 2005-2006 and the site is currently devoid of built structures. The site is located within a larger area of relatively flat vacant land which contains fragmented native vegetation.

The site is bordered by Hyde Lane and Cedar Street to the west and Hyde Street to the north. Other land uses surrounding the site include residential, industrial and retail. The closest private residence is located immediately west of the site on Hyde Lane.

1.4 Purpose of this report

This PSI report has been prepared by EMM to inform the SEE and DA for the project in developing an understanding of contamination issues that could impact the proposed development, as well as an understanding of potential remediation and/or management measures, if necessary.

1.5 Scope of work

The PSI addresses the following scope of works:

- Preparation of a PSI specific to the redevelopment site, including consideration of the following:
  - review of site setting, including soils, geology, hydrogeology, zoning, etc;
  - review of site history;
  - review of historical aerial imagery;
  - review of historical soil and groundwater data; and
  - a site inspection of the site and surrounding area.
- Development of a preliminary conceptual site model (preliminary CSM).
- Preparation of a PSI report, documenting the work completed.

1.6 Regulatory framework

The National Environment Protection Council (NEPC) National Environment Protection (Assessment of Contamination) Measure (ASC NEPM) 1999, amended 2013 (ASC NEPM, 1999), establishes a nationally consistent approach to the assessment and management of contaminated land in Australia and is given effect by legislation and guidelines in each state and territory. Contaminated land in NSW is primarily dealt with by the NSW Environment Protection Authority (EPA) and planning authorities (state and local governments).

1.6.1 NSW Contaminated Land Management Act 1997

The NSW *Contaminated Land Management Act 1997* (CLM Act) aims to better promote the management of contaminated land. The objectives of the CLM Act are to establish a process for investigating and (where appropriate) remediating land areas where contamination presents a significant risk of harm to human health or some factor of the environment.

The NSW EPA has powers to respond to contamination that is causing significant risk of harm to human health or the environment. The NSW EPA can direct landowners to investigate or remediate contaminated land and requires landowners to report contamination where there is a significant risk of harm (duty to report). The CLM Act may be triggered if contamination migrates beyond site boundaries.

1.6.2 NSW Protection of the Environment Operations Act 1997

The NSW *Protection of the Environment Operations Act 1997* (POEO Act) is also administered by the NSW EPA. It prohibits any person to cause pollution of waters, land or air and provides penalties for specified offences. The POEO Act enables the NSW Government to set out explicit protection of the environment policies and adopt more innovative approaches to reducing pollution. The POEO Act also requires 'scheduled activities' listed at Schedule 1 to the POEO Act to be carried out in accordance with an Environment Protection Licence (EPL).

1.6.3 Environmental Planning and Assessment Act 2000 and State Environmental Planning Policy 55 – Remediation of Land

State Environmental Planning Policy 55 – Remediation of Land (SEPP 55) is a planning instrument under the EP&A Act that applies to state land.

SEPP 55 Clause 7 outlines considerations regarding contamination and remediation in determining development applications by local government authorities and provides requirements for investigations to be undertaken where a change of land use is proposed.

SEPP 55 also specifies when remediation works will require Development Consent from the local consent authority.

1.7 Guidelines

Relevant guidelines that have been developed or endorsed by the NSW EPA and considered in this PSI include:

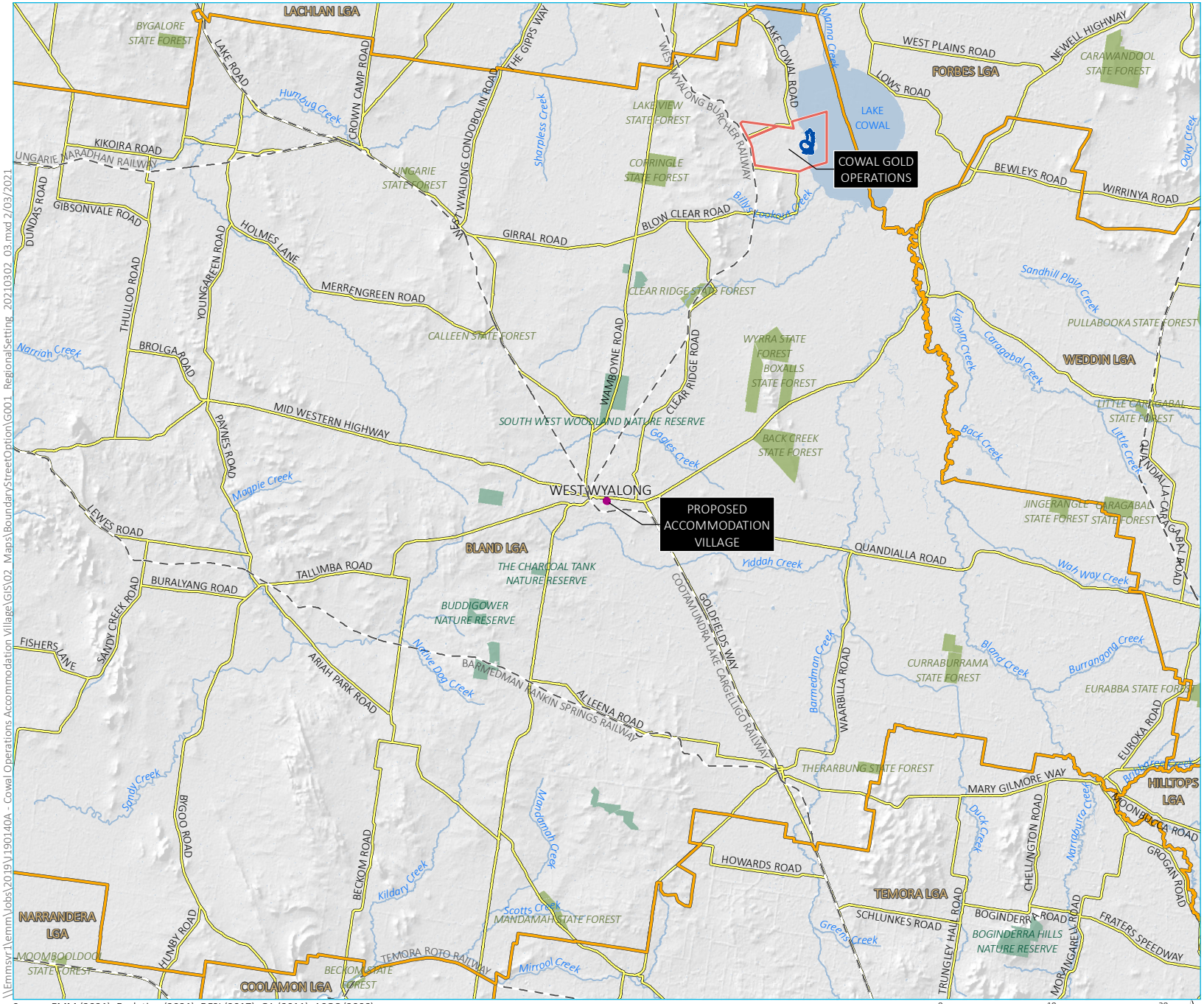
- the ASC NEPM[1];
- NSW EPA (2020) Consultants reporting on contaminated land; and
- NSW Department of Environment and Conservation (2007) Guidelines for the Assessment and Management of Groundwater Contamination.

1.8 Data sources

In preparing the PSI, EMM has referred to the following data sources:

- Lotsearch report, Property Details: Hyde Street, West Wyalong, NSW 2671. 21 December 2020. Lotsearch (included in Appendix A);
- NSW Government SIX Maps; and
- Australian Government Bureau of Meteorology Climate Data Online (http://www.bom.gov.au/climate/data/index.shtml).

[1] The ASC NEPM is made under the *National Environment Protection Council Act 1994 (Cth)* and is given effect by individual legislation and guidelines in each state and territory.



KEY

- Site boundary
- Proposed underground development
- Mining lease
- Rail line
- Main road
- Named watercourse
- Waterbody
- Local government area
- NPWS reserve
- State forest

Source: EMM (2021); Evolution (2021); DFSI (2017); GA (2011); ASGC (2006)

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Regional setting

Evolution Mining
Cowal Gold Operations
Accommodation Village - Boundary Street
Preliminary site investigation
Figure 1.1

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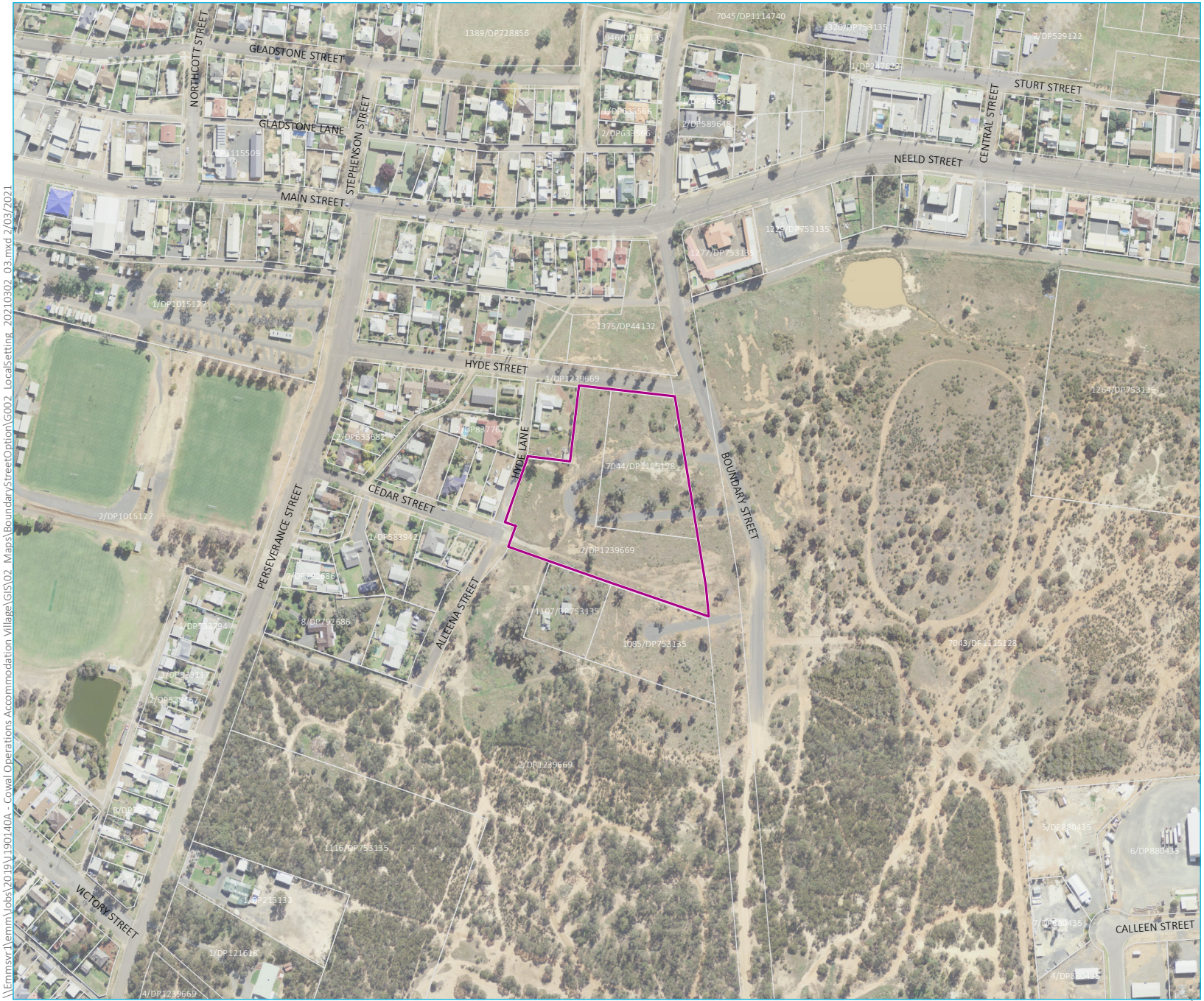

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Source: EMM (2021); Evolution (2021); DFSI (2017)

Local setting

Evolution Mining
Cowal Gold Operations
Accommodation Village - Boundary Street
Preliminary site investigation
Figure 1.2

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2 Environmental setting

2.1 Surrounding land uses

Notable land uses in the surrounding area are summarised in Table 2.1.

Table 2.1 Surrounding land uses

Direction	Surrounding land uses
North	The area to the north of the site is generally residential. Hyde Street borders the site to the immediate north, running in an east/west orientation. Main Street is approximately 140 m north of the site, running in an east/west orientation. Several commercial buildings are located along it. Beyond Main Street, additional residential properties and a park are located to the north of the site.
East	The area to the east of the site currently comprises vacant cleared land, with a dam and unsealed tracks including an oval track. Boundary Street borders the site to the immediate east, running in a north/south orientation. A bituminous gravel circular road extends from Boundary Street into the centre portion of the site. This circular 'ring' road was historically identified as 'Nugget Crescent' in the Barrick accommodation village SEE but is not formally identified on publicly available records. Beyond Boundary Street, a sewage treatment plant is located 1.1 km to the east of the site.
South	The area to the south of the site comprises disturbed remnant native grassland/woodland. Beyond, commercial/industrial buildings are present to the south to south-east including a service station and several workshops. The train line is located approximately 1.3 km to the south of the site in a north-west/east orientation.
West	The area to the west of the site is generally residential. Hyde Lane and Aleena Street border the site, running in a south-west/north orientation. Parkland including West Wyalong Stadium is located 200 m to the west of the site. West Wyalong Airfield is located 1.2 km to the south-west of the site, beyond the train line.

2.2 Topography

The site is generally flat, with a slight slope towards the north from approximately 256 metres Australian Height Datum (m AHD) at the southern boundary of the site to approximately 254 m AHD at the northern boundary of the site. This slope is consistent with the surrounding area, which generally slopes towards the north.

2.3 Geology and soils

The Forbes 1:250,000 geological map indicates that the site is underlain by predominately highly weathered granite with scattered ferruginous lag derived from mottled saprolite; colluvial sediments on plains and rises (refer to Appendix A). A north-west/south-east fault is present approximately 700 m to the east of the site.

The soils at the site are identified as gently undulating side slopes, plains and drainage lines on Quaternary alluvium and colluvium west of West Wyalong. Acid Sulfate Soils (ASS) have a "low" probability of occurrence (refer to Appendix A). Salinity potential information is not available for the site.

2.4 Hydrogeology

The aquifer type beneath the site is identified as fractured or fissured, extensive and of low to moderate productivity (Appendix A). Based on local topography, groundwater flow would be expected to the north.

Four registered groundwater bores were identified within a 2 km radius of the site however no groundwater bores were identified within the site. Two monitoring bores are installed approximately 1.3 km to the west of the site (GW703611 and GW703585). These bores were drilled to a total depth of 4.4 m below ground level (m bgl) in sandy clay and gravelly clay and had a recorded standing water level (SWL) of 4.35 m bgl within the superficial aquifer following installation. One bore identified for industrial use is installed 0.8 km to the north-east of the site (GW059484). This bore was drilled to a total depth of 74 m bgl in granite and did not have a SWL noted, although a water bearing zone was noted at 74 m bgl during drilling. Limited information is available on the final bore, which was installed for domestic use 1.4 km to the north-west of the site.

2.5 Surface water and drainage

No drainage features are currently visible on the site, with overland surface water flow anticipated to flow towards the north in line with local topography. Surface water flow at the site would be expected to infiltrate the ground due to the unsealed surface. If sufficient groundwater is present within the superficial aquifer to generate flow, groundwater flow is anticipated to be towards the north following the topography.

There are several farm dams and retention ponds surrounding the site, with the closest one present approximately 160 m to the north-east of the site.

Low potential groundwater dependant ecosystems (GDE) are present in the southern portion of the site.

2.6 Climate

Climate data collected from Wyalong Post Office (site number 073054)[2], located approximately 2.4 km to the west of the site, indicates that the site is in a temperate region, with mean maximum temperatures ranging between 14.1°C (July) and 32.9°C (January) and mean minimum temperatures of between 3.0°C (July) and 17.6°C (January).

Average annual rainfall is 476.5 millimetres (mm), with no clear pattern in the average monthly rainfall which ranged from 34.8 mm (April) to 44.7 mm (October). Rainfall appears occur in high volume events which occur more predominately in summer months.

[2] http://www.bom.gov.au/climate/data/index.shtml

3 Site history

3.1 Aerial photographs

Aerial photographs of the site and the surrounds were obtained from 1958 to the present day, as summarised in Table 3.1. Aerial photographs are included in the database search report, presented in Appendix A. The satellite imagery from 2005 is presented in Figure 3.1.

Table 3.1 Aerial photograph review

Year	Site	Surrounding area
1958	The site appears to be primarily grassland/ woodland with trees present in the centre and southern boundary of the site. Several unsealed tracks can be observed traversing the site, with more substantial tracks running east-west through the southern portion of the site and north-south through the centre portion of the site.	The surrounding area is predominately grassland/woodland with unsealed tracks. A dam is visible to the north-east of the site. Residential properties are visible to the north.
1968	No significant changes are observed.	Additional buildings are visible on properties to the north and west of the site.
1973	Unsealed tracks previously visible are less apparent, with the more substantial tracks still running east-west and north-south through the site.	No significant changes are observed.
1981	No significant changes are observed.	Additional buildings are present on properties to the west of the site. Roads to the north and east of the site now appear to be paved/sealed, including Cedar Street, Hyde Street, Perseverance Street and Main Street. An unsealed track in an oval shape is now visible to the east of the site.
1989	The north-south unsealed track has now been replaced with a bituminous gravel circular track extending into the centre of the site from Boundary Street to the east.	Boundary Street now appears to be paved/sealed. The unsealed track around the oval to the east has now been extended.
1996	No significant changes are observed.	No significant changes are observed. Additional buildings are visible on properties to the south-west and south-east and a house to the south-west has been demolished.
2005	A large number of demountable buildings are present within the south-eastern portion of the site, understood to be the former Barrick Australia Pty Ltd Accommodation Village, constructed in 2004 for use as a temporary residential accommodation village, then demolished between 2005-2006.	An extension of demountable buildings onsite to the south/south-east of the site including a car park adjacent to Boundary Street. Refer to Figure 3.1 below for 2005 satellite imagery.
2006	The south-eastern portion of the site has been cleared, including part of the unsealed track running east-west. All buildings present in 2005 are no longer visible.	Land to the south-west of the site remains cleared. All buildings present in 2005 have been demolished or removed and are no longer visible.
2011	Grass has regrown in the cleared area and the east-west unsealed track extending from Cedar Street has been re-established.	No significant changes are observed.
2015	No significant changes are observed.	No significant changes are observed.
2020	A potential stockpile is noted in the centre of the site. Small areas of ground disturbance are noted.	No significant changes are observed.

Source: EMM (2021); Evolution (2021); DFSI (2017); Google Earth (2005)

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2005 imagery

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Figure 3.1

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4 Data base search results

Database search results are presented in Appendix A.

4.1 EPA databases

Contaminated Land

The site was not identified on the NSW EPA contaminated land record of notices or as sites notified as contaminated to the EPA.

Two sites were listed on the NSW EPA Contaminated Land list within a 1 km radius of the site:

- Lowes Petroleum (Former BP) Depot West Wyalong – 786 m to the south; and
- Former Mobil Depot – 787 m to the south.

No other sites were identified as being on the NSW EPA contaminated land record of notices or as sites notified as contaminated to the EPA.

NSW PFAS Investigation Program

No sites on the NSW Government Per- and polyfluoroalkyl substances (PFAS) Investigation Program were identified at the site or in the surrounding area.

Environment Protection Licences

One current licence is present within a 1 km radius of the site. Environment Protection Licence (EPL) 13421 for railway system activities is located at the railway line present 841 m to the south of the site.

Three former licenced activities are present within 1 km radius of the site. EPL 4653, 4838, and 6630 for the application of herbicides in a park waterway 403 m to the north of the site. These licenses were surrendered in 2000.

No delicenced activities are present within a 1 km radius of the site.

4.2 Planning Certificate

A Section 10.7(2) and (5) certificate was obtained from Bland Shire Council (BSC) which notes that the BSC has no records of significant contamination on the site. In addition, the site was not proclaimed to be a mine subsidence district within section 15 of the *Mine Subsidence Compensation Act* (refer Section 4.4). A copy of this certificate is provided in Appendix B.

4.3 Statement of Environmental Effects (2004)

Barrick lodged a SEE with BSC in 2004 to support a development application seeking development consent for the erection, fit out and use of a temporary residential accommodation "village" at Boundary Street, West Wyalong for a period of 15 months. The footprint of the proposed accommodation village area (excluding carparking) covers approximately 17,388 square metres (m^2). The buildings were designed to cover an area of approximately 7,085 m^2.

The temporary residential accommodation village was designed to accommodate 380 male and female construction employees during their stay in West Wyalong while employed at the Cowal Gold Project and in particular the construction of the mine process plant. The village was designed to accommodate those employees who were unable to stay in existing hotels or motels in West Wyalong. The sole purpose of the village was to provide a high standard of temporary residential accommodation for a finite period of 15 months without disturbing the existing character of the West Wyalong township.

The buildings were reportedly pre-fabricated portable buildings complying with applicable Australian Standards complete with single accommodation units with shared ensuites, laundry units, a kitchen and dining facility, a recreation centre, village office and manager's residence. The application also made allowance for the provision of a dedicated car park for 135 vehicles on Gunters Close adjoining the village to the south.

Although the exact construction and demolition dates are unknown by EMM, the aerial photograph review undertaken (refer Table 3.1) indicates that the village was in place in 2005 and demolished by the time the 2006 photograph was taken.

4.4 Geophysical Survey, Accommodation Village Site, West Wyalong (Golder, 2004)

Barrick engaged Golder Associates Pty Ltd (Golder) to undertake geophysical survey and prepare an accompanying report for the site to assess the ground subsidence risk of the proposed accommodation village.

The report indicated that historical residential subdivision of the site was abandoned in the 1980s due to the evidence of subsidence.

The geophysical survey was undertaken by Golder using spectral analysis of surface wave (SASW) methods. The results of the investigation indicated zones of very loose and loose material extending to 10-m depth, that may be indicative of either backfilled shafts or collapse zones. The report also noted that fill may be present underlying the site. Future settlement rates could not be accurately predicted based on the information obtained during the survey. Further investigation was recommended to assess the nature of material underlying the site and to confirm the absence of voids.

4.5 Other databases

No sites on the Department of Defence (Defence) PFAS Investigation and Management Program, Regional Contamination Investigation Program, or AirServices Australia National PFAS Management Program were identified at the site or in the surrounding area.

Two national liquid fuel facilities were identified within 1 km radius of the site:

- BP Mid Western (Petrol station) – 503 m to the north-west; and
- West Wyalong (Fuel depot) – 786 m to the south.

There is one (1) current mining and exploration title held on the site:

- Weddarla Pty Ltd (title no. EL8815), for group 1 minerals, expires 14 January 2022.

Several historical mining and exploration titles held on or within a 1 km radius of the site for group 1 minerals, silver, gold, copper, lead, zinc, and tin.

Business directory records show the following properties located within a 500 m radius of the site:

- service station – 475 m north-west; and
- several dry cleaners, garages, and service stations along Main Street – 133 m north.

5 Site inspection

An inspection of the site was undertaken by an EMM environmental scientist on 22 February 2021. A photographic record is included in Appendix C, with the key observations summarised below.

5.1 Site features

The following features were observed on the site:

- bituminous gravel access road connecting Boundary Street and looping through the centre of the site (Photograph 1, Appendix C);
- unsealed access road along the southern site boundary;
- generally partial grass and small shrub cover with several eucalyptus trees across the site (Photograph 1, Appendix C);
- a number of small green service conduit pits, indicating the presence of underground assets, within the southern portion of the site (former Barrick accommodation village area);
- no evidence of staining from hydrocarbons or other chemicals was noted on the ground surface across the site;
- no evidence of livestock grazing, cropping or other intensive agricultural activities on the site;
- generally no or minimal fencing/signage observed on the site, making it readily accessible;
- a number of small stockpiles of varying size (approximately 1−5 m^3 each) indicative of minor waste disposal activities was observed. The stockpiles were primarily located within the south-western portion of the site, and comprised bricks, polyvinyl chloride (PVC) pipes and concrete fragments (Photographs 2−3, Appendix C);
- a single potential asbestos containing material (ACM) fragment was observed in one of the small stockpiles (Photograph 4, Appendix C); and
- a large soil stockpile (approximately 200 m^3) in the centre of the site which appeared to be used as a bike trail (Photographs 5−7, Appendix C).

5.2 Site surrounds

The following features were observed surrounding the site:

- residential land use adjacent to the western boundary;
- largely undeveloped land across Boundary Street to the east and to the south;
- small undeveloped land immediately to the north, followed by residential and commercial land uses;
- West Wyalong Bulk Water Filling Station along Boundary Street, approximately 20 m northwest of site; and

- no evidence of livestock grazing, cropping or other intensive agricultural activities within close proximity to the site.

6 Conceptual site model

This PSI has considered information from a range of sources to assess potential contamination risks to site users. This preliminary conceptual site model (CSM) has been developed based on the available information, as presented in this report, to identify complete or potentially complete linkages between contaminant sources and sensitive receptors, in the context of the proposed future use of the site as a residential accommodation village.

6.1 Contaminant sources

Based on the information available, potential sources of contamination and contaminants of potential concern (CoPC) identified at the site are summarised in Table 6.1.

Table 6.1 Potential contaminant sources and CoPC

Source	CoPC	Likelihood of contamination/release mechanism
On-site: stockpiling, potential historical filling of voids	Asbestos, petroleum hydrocarbons, polychlorinated biphenyls (PCB), heavy metals, pesticides	Stockpiles of soil were observed in the 2020 dated aerial photograph and confirmed during the site inspection. This includes one large stockpile in the central portion of the site, and smaller stockpiles mostly located within the south-western portion of the site. Material observed included building waste (bricks, concrete, PVC pipes and potential ACM). Previous reports (Golder, 2004), indicate the site may be subject to subsidence as a result of historical mining activities beneath the site and some filling of voids may have occurred.
Former Barrick accommodation village	Petroleum hydrocarbons, pesticides	A large number of demountable buildings were constructed in 2004 within the south-eastern portion of the site, understood to be the former Barrick accommodation village. As the land use was a temporary residential village, which was demolished/dismantled between 2005-2006, the introduction of contamination sources is considered to have been unlikely.
On and off-site: pesticide and herbicide use	OCP/OPP	The site and surrounding land to the east and south are vacant grassland. The potential use of pesticides and herbicides across the site, including organochlorine and organophosphorus pesticides (OCP/OPPs), cannot be precluded.

6.2 Pathways

Potential transport mechanisms for contamination include:

- leaching of contaminants from waste materials into soils and groundwater;
- spills and leaks from chemical storage onto soil and/or into surface water;
- infiltration through the soil profile;
- release of windblown dust and fibres;
- migration of contaminated groundwater (based on topography groundwater would be expected to flow to the north);
- discharge of groundwater into nearby surface water catchments;
- overland flow of impacted surface water, likely to be to the north; and

- migration of soil vapour, through soils and preferential pathways such as underground service conduits.

Potential exposure pathways include:

- direct contact/incidental ingestion of contaminated soil, groundwater and/or surface water;
- inhalation of windblown dust and/or fibres;
- inhalation of soil vapour; and
- uptake of contaminated groundwater/surface water by terrestrial and aquatic ecosystems.

6.3 Receptors

In the context of the proposed use of the site as an accommodation village (residential land use), potential sensitive receptors are considered to comprise:

- construction and maintenance workers involved in development of the accommodation village infrastructure;
- future site users (temporary residents, village workers and site visitors);
- users of adjacent properties (residential and industrial); and
- terrestrial and aquatic ecosystems in the surrounding area.

6.4 Preliminary CSM

An assessment of the completeness of linkages between contaminant sources, pathways and sensitive receptors (S-P-R) is provided in Table 6.2.

Table 6.2 Source-pathway-receptor linkages

Source	Pathway(s)	Receptor(s)	S-P-R linkages potentially complete, without mitigation/management measures?
On-site: stockpiling, potential historical filling of voids underlying the site	Direct contact with or ingestion of impacted soil or surface water	construction and maintenance workers	Yes
		future site users (residential)	Yes
		adjacent site users	Yes (surface water)
	Direct contact with or incidental ingestion of impacted groundwater	construction and maintenance workers	Yes
	Inhalation of windblown dust/fibres	construction and maintenance workers	Yes
		future site users (residential)	Yes
		adjacent site users	Yes

Table 6.2 Source-pathway-receptor linkages

Source	Pathway(s)	Receptor(s)	S-P-R linkages potentially complete, without mitigation/management measures?
	Inhalation of soil vapour	construction and maintenance workers	Yes
		future site users (residential)	Yes
		adjacent site users	Unlikely
	Infiltration to regional aquifer	on-site and down gradient users of regional groundwater	Yes
	Uptake or ingestion of contaminated surface water	terrestrial ecology	Yes
		aquatic ecology	Yes
	Surface water flow overland	downgradient users of surface water	Yes
		aquatic ecology	Yes
		terrestrial ecology	Yes

7 Conclusions and recommendations

The objective of the PSI was to develop an understanding of contamination issues that could impact the proposed development, as well as an understanding of potential remediation and/or management measures, if necessary.

Although historically cleared of some of the native vegetation, the site, at the ground surface, has remained largely undeveloped, except for the former use of part of the site as a temporary accommodation village for an approximate 15-month period in 2005 and 2006. Several stockpiles were observed across the site, including one large stockpile in the central portion of the site and a number of smaller stockpiles mostly located within the south-western portion of the site. A single potential ACM fragment was observed within one of the smaller stockpiles.

Several current and historical mining and exploration titles have been granted over the site and surrounding area, however no evidence of significant surficial ground disturbance was observed on aerial imagery or during the site inspection, with the exception of the construction, operation and subsequent demolition of the former Barrick accommodation village. Notwithstanding, evidence obtained during the preparation of this PSI indicates the site may be subject to subsidence and historical filling of voids may have potentially occurred.

Based on the findings of this PSI, potential sources of contamination at the site are considered to be limited to the presence of stockpiled material of unknown origin, potential historical mining activities and associated potential filling of voids underlying the site.

Potentially complete contaminant S-P-R linkages were identified for construction and maintenance workers associated with development of the site and future site users (workers and visitors to the site). Down gradient users of surface and groundwater were also identified to have potentially complete S-P-R linkages, as were terrestrial and aquatic ecosystems.

Based on the information obtained during the preparation of this PSI, it is recommended that intrusive site investigations should be undertaken to evaluate ground conditions associated with potential historical filling and the presence of waste stockpiles. The work could be conducted in conjunction with a geotechnical investigation to evaluate potential ground subsidence issues and further inform the development plans for the site. Furthermore, it is recommended that a construction environmental management plan (CEMP), including an unexpected finds protocol, be prepared and implemented to manage any contamination which may be encountered during development works at the site.

References

Australian and New Zealand Environment and Conservation Council and the National Health and Medical Research Council (1992) Guidelines for Assessment and Management of Contaminated sites.

ANZECC 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Volume 1, Australian and New Zealand Environment and Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), October 2000.

Golder Associate Pty Ltd (Golder) 2004. Geophysical Survey, Accommodation Village Site, West Wyalong.

National Environment Protection Council (NEPC) 1999. *National Environment Protection (Assessment of Site Contamination) Measure 2013* (ASC NEPM, 2013).

NSW Department of Environment and Conservation (2006) Guidelines for the NSW site Auditor Scheme.

NSW Department of Environment and Conservation (2007) Guidelines for the Assessment and Management of Groundwater Contamination.

NSW EPA (2014) Waste Classification Guidelines Part 1: Classifying waste.

NSW EPA (2020) Guidelines for consultants reporting on contaminated land.

Appendix A

Database search

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 21 Dec 2020 19:26:46

Reference: LS016927 EP

Address: Hyde Street, West Wyalong, NSW 2671

Disclaimer:
The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features.
You should obtain independent advice before you make any decision based on the information within the report.
The detailed terms applicable to use of this report are set out at the end of this report.

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 Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	13/11/2020	13/11/2020	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	14/12/2020	14/12/2020	Monthly	1000	0	0	2
Contaminated Land Records of Notice	Environment Protection Authority	03/12/2020	03/12/2020	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	10/12/2020	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/11/2020	07/03/2017	Quarterly	1000	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	12/11/2020	13/07/2012	Quarterly	1000	0	0	2
EPA PFAS Investigation Program	Environment Protection Authority	14/12/2020	23/11/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	08/12/2020	08/12/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	08/12/2020	08/12/2020	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	07/12/2020	07/12/2020	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	14/12/2020	14/12/2020	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	04/02/2020	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	0	0	1
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	0	0	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	2
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150	-	4	423
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	1
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	20
Points of Interest	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	0	0	30
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Tanks (Points)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	1
Major Easements	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
State Forest	Forestry Corporation of NSW	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	21/01/2020	30/09/2019	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	26/10/2020	21/02/2018	As required	1000	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	4
Geological Units 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	1	-	1
Geological Structures 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	0	-	1
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	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	1000	1	1	2
Soil Landscapes of Central and Eastern NSW	NSW Department of Planning, Industry and Environment	14/10/2020	27/07/2020	Annually	1000	1	-	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	04/12/2020	03/07/2020	Monthly	500	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Department of Planning, Industry and Environment	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Current Mining Titles	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	1	1	1
Mining Title Applications	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	0	0	0
Historic Mining Titles	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	11	11	12
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	04/12/2020	07/12/2018	Monthly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	04/12/2020	27/11/2020	Monthly	1000	1	3	27
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	24/11/2020	20/11/2019	Quarterly	1000	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	24/11/2020	20/11/2019	Quarterly	1000	0	0	0
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	12/11/2020	02/07/2020	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning, Industry and Environment	04/12/2020	27/11/2020	Monthly	1000	0	0	17
Bush Fire Prone Land	NSW Rural Fire Service	15/12/2020	28/11/2020	Weekly	1000	2	2	2
Ramsar Wetlands of Australia	Department of the Agriculture, Water and the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	1	1	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	1	3	8
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	21/12/2020	21/12/2020	Weekly	10000	-	-	-

Site Diagram

Hyde Street, West Wyalong, NSW 2671

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 27692m²

Total Perimeter: 846m

Scale: 0 25 50 Meters

Data Sources: Aerial Imagery © NSW Department of Finance, Services & Innovation

Disclaimers:

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

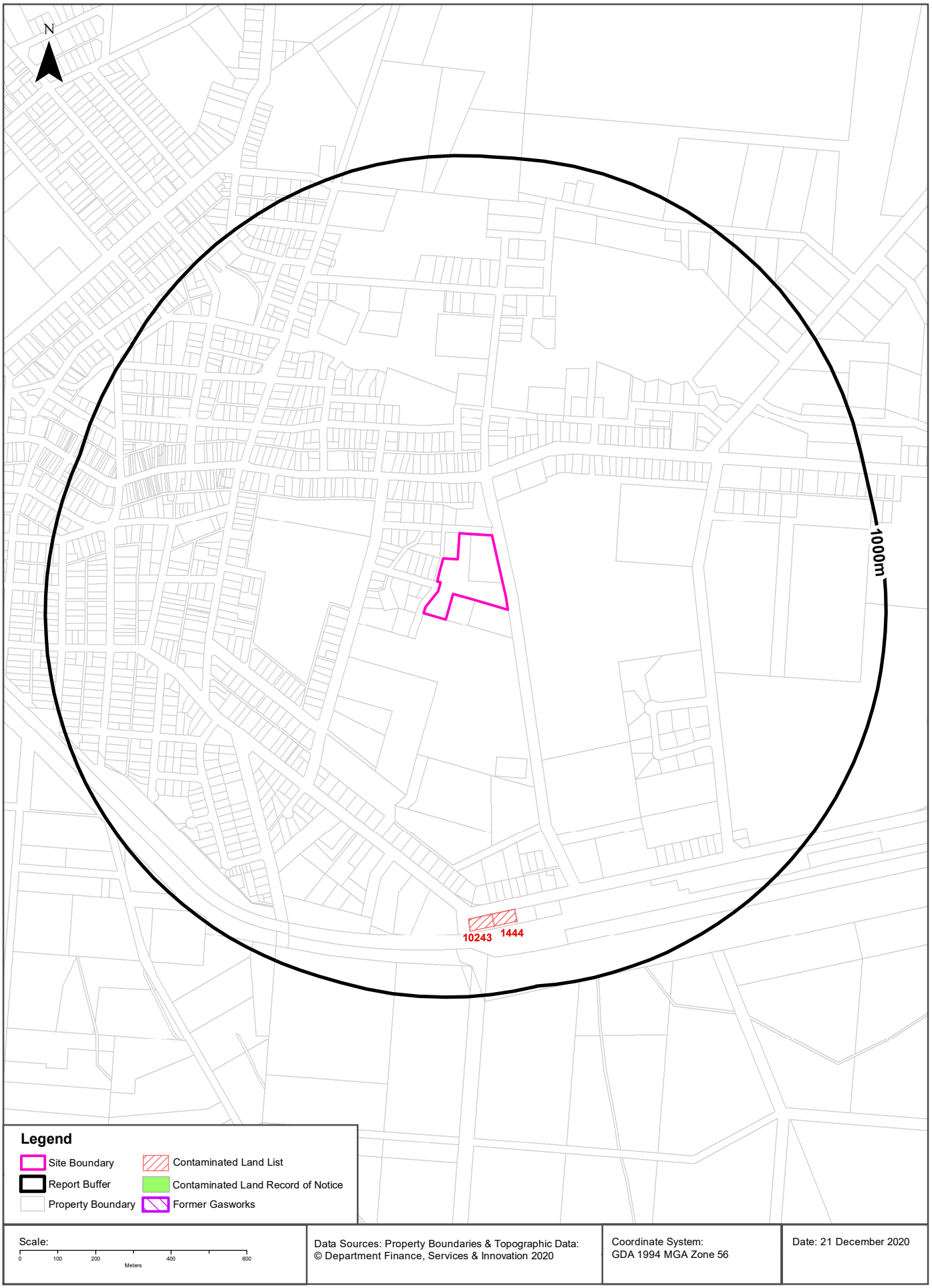
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Contaminated Land

Hyde Street, West Wyalong, NSW 2671



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Contaminated Land

Hyde Street, West Wyalong, NSW 2671

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 (m)	Direction
1444	Lowes Petroleum (Former BP) Depot West Wyalong	Compton (formerly known as Town Bypass/Railway Road) ROAD	West Wyalong	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	786m	South
10243	Former Mobil Depot	104 Compton ROAD	West Wyalong	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	787m	South

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Contaminated Land

Hyde Street, West Wyalong, NSW 2671

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
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

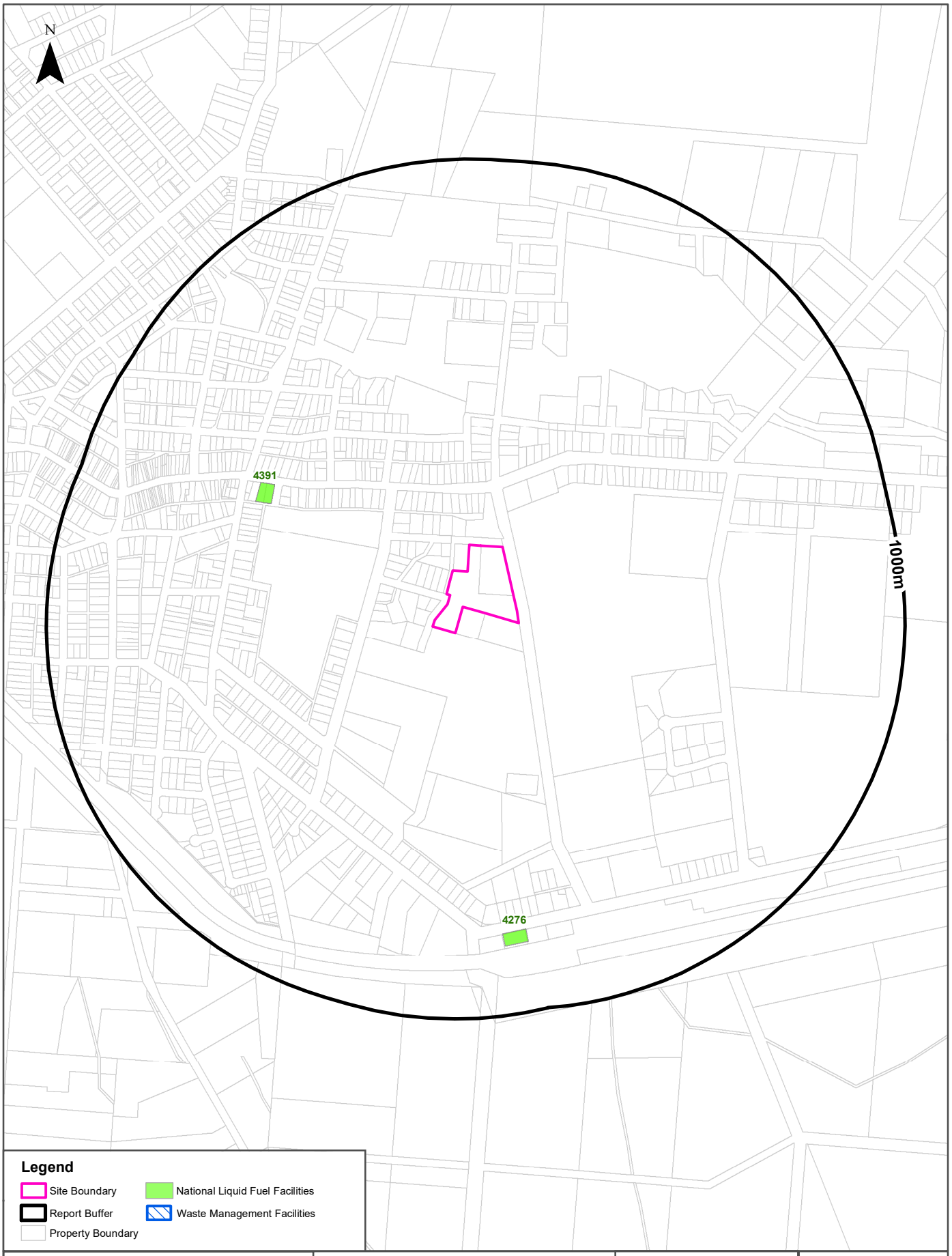
Former Gasworks within the dataset buffer:

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

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Hyde Street, West Wyalong, NSW 2671



Waste Management & Liquid Fuel Facilities

Hyde Street, West Wyalong, NSW 2671

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 (m)	Direction
N/A	No records in buffer											

Waste Management Facilities Data Source: Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

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 (m)	Direction
4391	BP	BP Mid Western	68-70 Main Street	West Wyalong	Petrol Station	Operational		25/07/2011	Premise Match	503m	North West
4276	BP	West Wyalong	Railway Road	West Wyalong	Fuel Depot	Operational		04/10/2012	Premise Match	786m	South

National Liquid Fuel Facilities Data Source: Geoscience Australia
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PFAS Investigation & Management Programs

Hyde Street, West Wyalong, NSW 2671

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Hyde Street, West Wyalong, NSW 2671

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
N/A	No records in buffer					

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

EPA Other Sites with Contamination Issues

Hyde Street, West Wyalong, NSW 2671

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

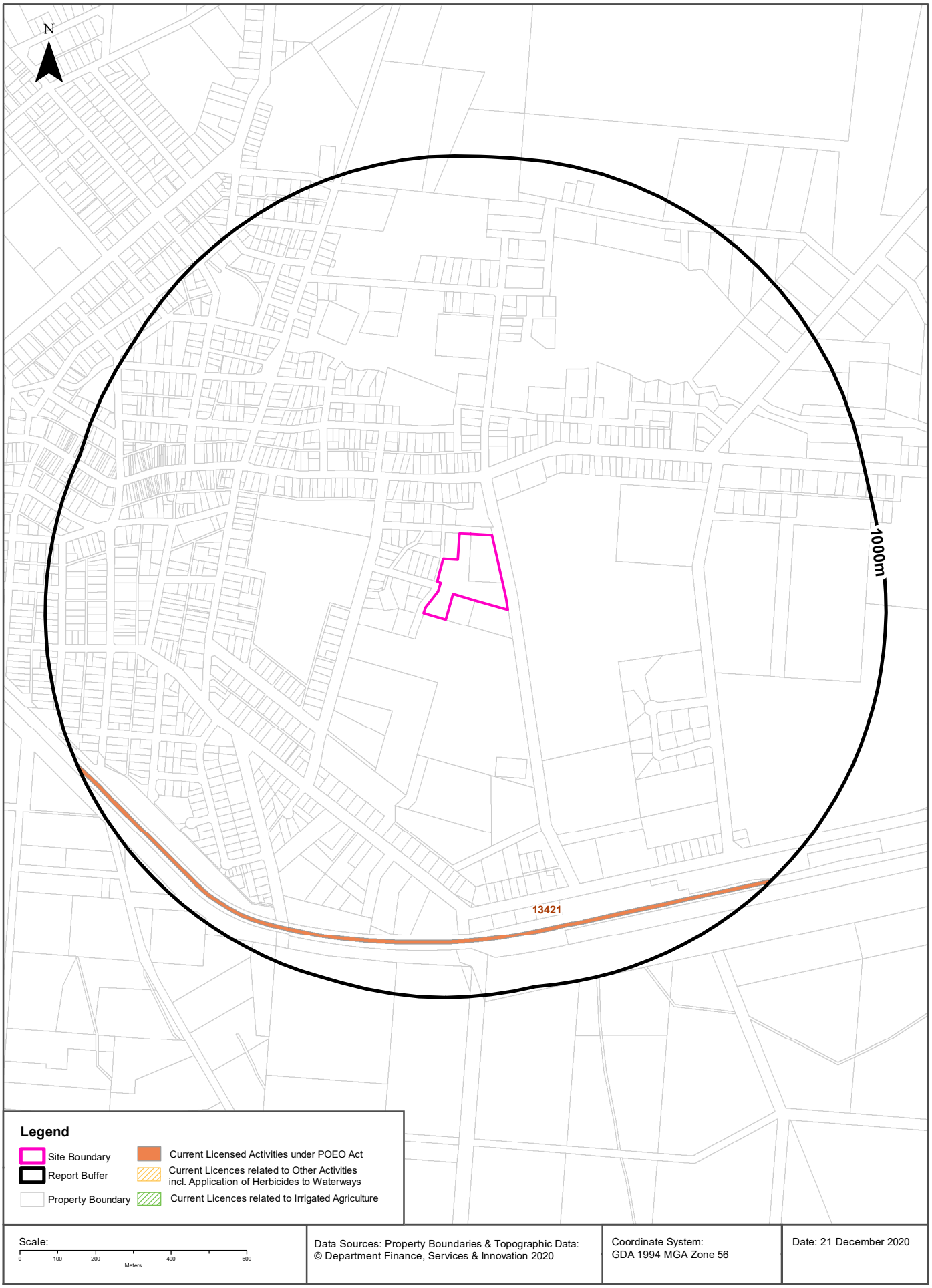
Sites within the dataset buffer:

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
© State of New South Wales through the Environment Protection Authority

Current EPA Licensed Activities

Hyde Street, West Wyalong, NSW 2671



EPA Activities

Hyde Street, West Wyalong, NSW 2671

Licensed Activities under the POEO Act 1997

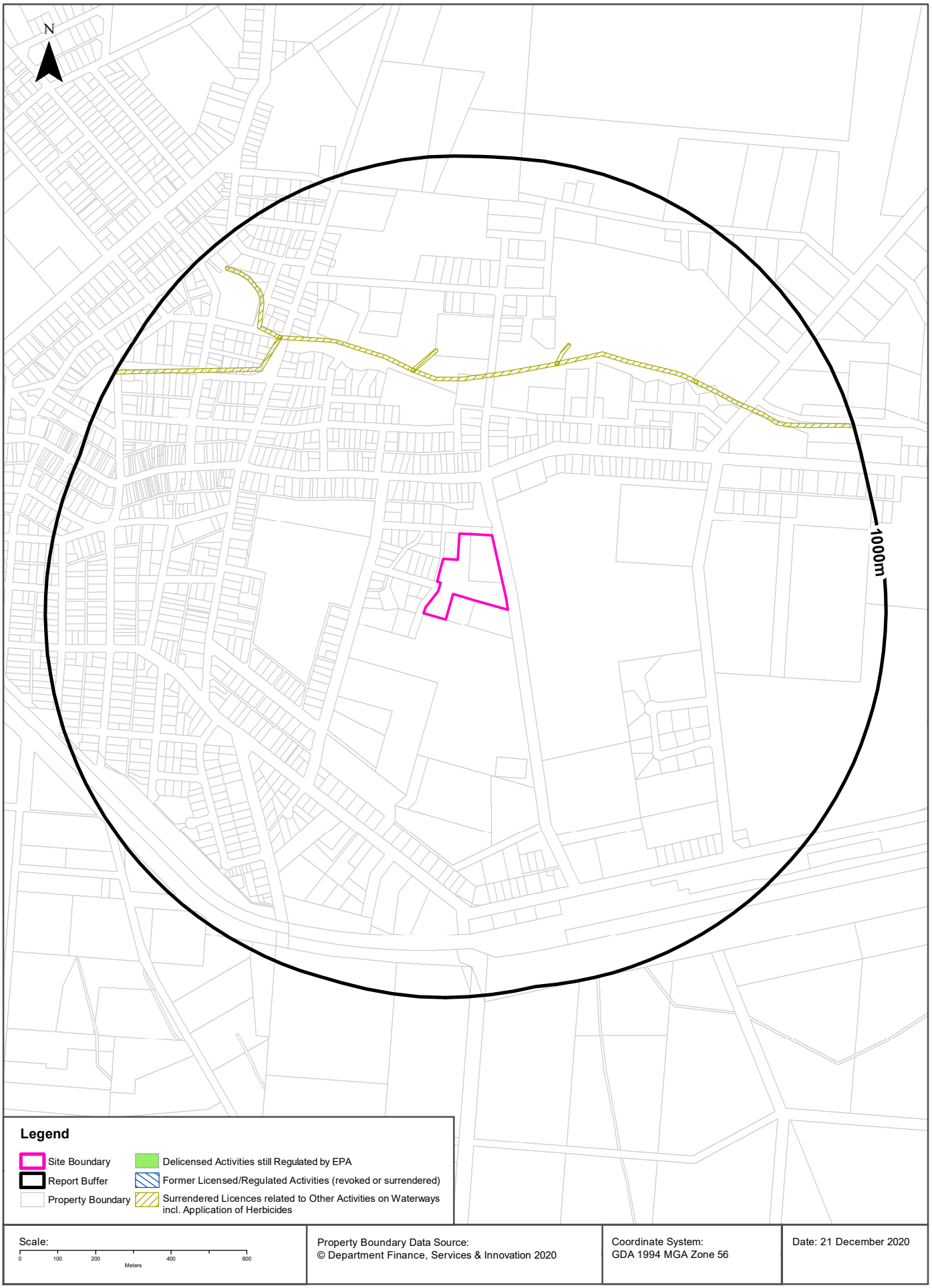
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
13421	JOHN HOLLAND RAIL PTY LTD		JOHN HOLLAND RAIL NETWORK, PARRAMATTA, NSW 2124		Railway systems activities	Network of Features	841m	South

POEO Licence Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

Hyde Street, West Wyalong, NSW 2671



EPA Activities

Hyde Street, West Wyalong, NSW 2671

Delicensed Activities still regulated by the EPA

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

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

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

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

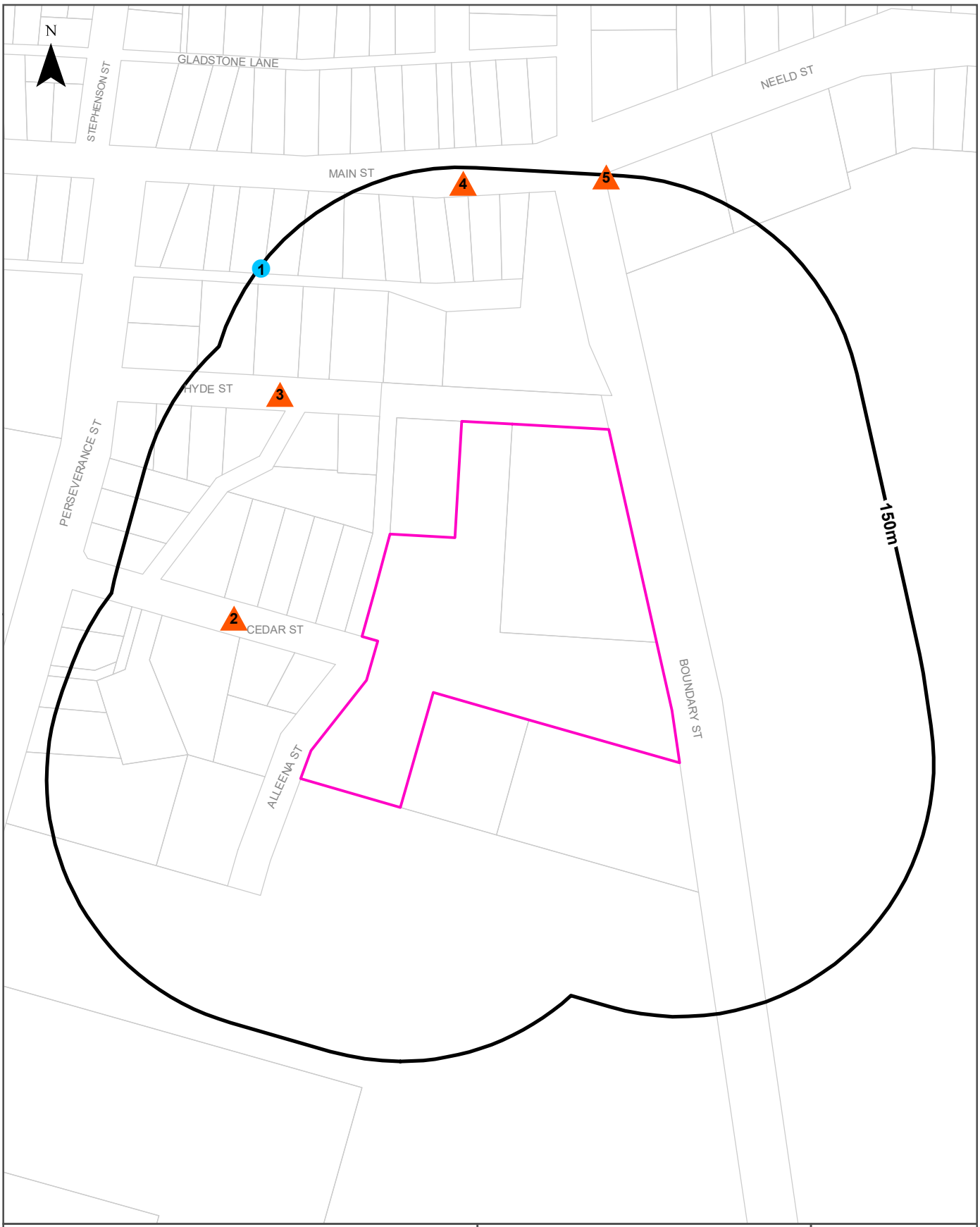
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

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	403m	-
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	403m	-
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	403m	-

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Historical Business Directories

Hyde Street, West Wyalong, NSW 2671



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 40 80 120 160 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

Hyde Street, West Wyalong, NSW 2671

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	INSURANCE AGENTS	Muir. O C., 20 Main St	123888	1991	Premise Match	146m	North West
	INSURANCE AGENTS	Muir, O. C., 20 Main St., West Wyalong	135124	1982	Premise Match	146m	North West

Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

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
2	BUILDERS &/OR BUILDING CONTRACTORS	Player J., Cadar St	123725	1991	Road Match	10m
	BUILDERS &/OR BUILDING CONTRACTORS	Player, J., Cedar St., West Wyalong	134978	1982	Road Match	10m
3	ASSOCIATIONS &/OR SOCIETIES	Innar Wheel., Hyde St	123633	1991	Road Match	48m
	FLORISTS - RETAIL.	Bennett, Marc, Hyde St., West Wyalong	135056	1982	Road Match	48m
4	WELDERS	Broderick J. Pty. Ltd., Main St	120765	1991	Road Match	133m
	AGRICULTURAL MACHINERY REPAIRS	Broderick. (Machinery) Pty Ltd., Main St	123595	1991	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS & HIRERS	Broderick. J. (Machinery) Pty. Ltd., Main St	127331	1991	Road Match	133m
	MOTOR GARAGES & SERVICE STATIONS	Broderick. J. (Machinery) Pty. Ltd., Main St	123953	1991	Road Match	133m
	SIGNWRITERS	Byrne. V., Main St	124045	1991	Road Match	133m
	MOTELS	Charles Slurt Flag Inn., Main St	123922	1991	Road Match	133m
	RESTAURANTS	Charles Sturt Flag Inn., Main St	124019	1991	Road Match	133m
	MOTELS	Colonial Motor Inn., Main St	123923	1991	Road Match	133m
	GOVERNMENT DEPARTMENTS	Commonwealth Emptoyment Sarvice., Main St	123838	1991	Road Match	133m
	MOTELS	Control Motel., Main St	123921	1991	Road Match	133m
	ASSOCIATIONS &/OR SOCIETIES	Frail Aged Activity Centre., Main St	123624	1991	Road Match	133m
	LIVESTOCK TRANSPORTS	Jammission. C E R., Main St	123899	1991	Road Match	133m
	AGRICULTURAL MACHINERY &/OR PARTS &/OR EQUIPMENT MFRS. &/OR IMPS. &/OR DISTS	Jansen Machinery Pty Ltd., Main St	127335	1991	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS & HIRERS	Jansen Machinery Pty Ltd., Main St	127332	1991	Road Match	133m
	AGRICULTURAL MACHINERY REPAIRS	Jantan Machinery Pty Ltd., Main St	123596	1991	Road Match	133m
	CARRIERS &/OR CARTAGE CONTRACTORS	Mason. C. E. R., Main St	123751	1991	Road Match	133m
	ASSOCIATIONS &/OR SOCIETIES	Pistol Club (C7 Mra B. C Tierney)., Main St	123645	1991	Road Match	133m
	GOVERNMENT DEPARTMENTS	State Emergency Service., Main St	123847	1991	Road Match	133m
	TAXI &/OR HIRE CAR SERVICES	Taxi Rank., Main St	120734	1991	Road Match	133m
	RESTAURANTS	True Blue Mina Motor Inn., Main St	124025	1991	Road Match	133m
	MOTELS	True Blue Mine Motor Inn., Main St	123927	1991	Road Match	133m
	ASSOCIATIONS &/OR SOCIETIES	Waratah Retirement Village Association. (C7 Mr. P Oodde)., Main St	123666	1991	Road Match	133m
	BAKERS	Whats Coking, Main St	123699	1991	Road Match	133m
	AGRICULTURAL MACHINERY HIRERS &/OR DEALERS	Broderick, J Pty. Ltd., Main St., West Wyalong	134886	1982	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	AGRICULTURAL MACHINERY REPAIRS	Broderick, J Pty. Ltd., Main St., West Wyalong	134893	1982	Road Match	133m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Broderick, J Pty. Ltd., Main St., West Wyalong	135187	1982	Road Match	133m
	WELDERS - ELECTRIC &/OR OXY	Broderick, J Pty. Ltd., Main St., West Wyalong	135327	1982	Road Match	133m
	MOTELS	Central Motel, Main St., West Wyalong	135154	1982	Road Match	133m
	MOTELS	Charles Sturt Flag Inn, Main St., West Wyalong	135155	1982	Road Match	133m
	RESTAURANTS	Charles Sturt Flag Inn, Main St., West Wyalong	135256	1982	Road Match	133m
	GOVERNMENT DEPARTMENTS	Commonwealth Employment Service, Main St., West Wyalong	135074	1982	Road Match	133m
	MOTELS	Country Comfort Motor Lodge. Main St., West Wyalong	135156	1982	Road Match	133m
	ENGINEERS - GENERAL &/OR MANUFACTURING &/OR MECHANICAL.	Funnell, J. W. & Sons 211 Main St., West Wyalong., West Wyalong	135047	1982	Road Match	133m
	CARRIERS &/OR CARTAGE CONTRACTORS	Jamieson, C. E. R., Main St., West Wyalong	134997	1982	Road Match	133m
	LIVESTOCK CARRIERS	Jamieson, C. E. R., Main St., West Wyalong	135134	1982	Road Match	133m
	TAXI &/OR HIRE CAR SERVICES	Taxi Rank, Main St., West Wyalong	135300	1982	Road Match	133m
	MOTELS	True Blue Motel, Main St., West Wyalong	135160	1982	Road Match	133m
	CAMPING GROUNDS &/OR CARAVAN PARKS	West Wyalong Caravan Park, Main St., West Wyalong	134988	1982	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Broderick, J. (Machinery) Pty. Ltd., Main St. West Wyalong	553836	1970	Road Match	133m
	AGRICULTURAL MACHINERY REPAIRERS	Broderick, J. (Machinery) Pty. Ltd., Main St. West Wyalong	553848	1970	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Broderick, J. (Machinery) Pty. Ltd., Main St. West Wyalong	554218	1970	Road Match	133m
	WELDERS-ELECTRIC &/OR OXY	Broderick, J. (Machinery) Pty. Ltd., Main St. West Wyalong	554380	1970	Road Match	133m
	MOTELS	Central Motel, Main St. West Wyalong	554180	1970	Road Match	133m
	MONUMENTAL MASONS	Cullen, E. H., Main St. West Wyalong	554179	1970	Road Match	133m
	CHEMISTS-PHARMACEUTICAL	Dodds, P. W., 111 Main St. West Wyalong	553976	1970	Road Match	133m
	PHOTOGRAPHIC SUPPLIES	Dodds, P. W., 111 Main St. West Wyalong	554278	1970	Road Match	133m
	RADIO, T.V. SALES, SERVICE &/OR HIRERS	Douglas T.V. Service, Main St. West Wyalong	554289	1970	Road Match	133m
	LIVESTOCK CARRIERS	Jamieson, R. & V., Main St. West Wyalong	554137	1970	Road Match	133m
	BILLIARD SALOONS	McDonald, J., Main St. West Wyalong	553912	1970	Road Match	133m
	TAXI &/OR HIRE CAR SERVICES	Taxi Rank, Main St. West Wyalong	554356	1970	Road Match	133m
	CAMPING GROUND & CARAVAN PARK	West Wyalong Caravan Park, Main St. West Wyalong	553953	1970	Road Match	133m
	GOVERNMENT DEPARTMENTS	West Wyalong Post Office, Main St. West Wyalong	554065	1970	Road Match	133m
	AERATED WATER & CORDIAL MANUFACTURERS	Aberline, A., Main St., West Wyalong	232619	1961	Road Match	133m
	INSURANCE AGENTS	Aberline, A., Main St., West Wyalong	232812	1961	Road Match	133m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Aberline, A., Main St., West Wyalong	232867	1961	Road Match	133m
	MOTOR CAR & TRUCK DEALERS-NEW & USED	Aberline, A., Main St., West Wyalong	232886	1961	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Aberline, A., Main St., West Wyalong	232896	1961	Road Match	133m
	MOTOR TOWING SERVICES	Aberline, A., Main St., West Wyalong	232939	1961	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	TYRE & TUBE DEALERS	Aberline, A., Main St., West Wyalong	233028	1961	Road Match	133m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Aberline, A., Maln St., West Wyalong	232924	1961	Road Match	133m
	DENTISTS	Adams, J. K., Maln St., West Wyalong	232708	1961	Road Match	133m
	STATION & FARM SUPPLIES	Bland Trading Co., Main St., West Wyalong	232999	1961	Road Match	133m
	VETERINARY SUPPLIES & INSTRUMENTS	Bland Trading Co., Main St., West Wyalong	233039	1961	Road Match	133m
	BOOT & SHOE REPAIRERS	Bruce, W., Main St., West Wyalong	232662	1961	Road Match	133m
	BANKS	Commercial Bank of Australia, Main St., West Wyalong	232643	1961	Road Match	133m
	ENGINEERS-GENERAL, MFRG. & MECHANICAL	Darley's Garage, Main St., West Wyalong	232734	1961	Road Match	133m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Darley's Garage, Main St., West Wyalong	232871	1961	Road Match	133m
	FANCY GOODS & GIFT SHOPS	Easterbrooks West Wyalong Newsagency, Main St., West Wyalong	232744	1961	Road Match	133m
	INSURANCE AGENTS	Easterbrooks West Wyalong Newsagency, Main St., West Wyalong	232817	1961	Road Match	133m
	JEWELLERS & WATCHMAKERS-RETAIL	Easterbrooks West Wyalong Newsagency, Main St., West Wyalong	232833	1961	Road Match	133m
	MUSIC & MUSICAL INSTRUMENTS-RETAIL	Easterbrooks West Wyalong Newsagency, Main St., West Wyalong	232943	1961	Road Match	133m
	NEWSAGENTS	Easterbrooks West Wyalong Newsagency, Main St., West Wyalong	232945	1961	Road Match	133m
	SPORTS & TRAVEL GOODS-RETAIL	Easterbrooks West Wyalong Newsagency, Main St., West Wyalong	232993	1961	Road Match	133m
	TOY DEALERS-RETAIL	Easterbrooks, Main St., West Wyalong	233022	1961	Road Match	133m
	PLUMBERS, GASFITTERS & DRAINLAYERS	Gathercole, E. A., Main St., West Wyalong	232966	1961	Road Match	133m
	BUILDERS & CONTRACTORS	Godber, R. L., Main St., West Wyalong	232669	1961	Road Match	133m
	MOTELS	Gold Mine Motel, Main St., West Wyalong	232866	1961	Road Match	133m
	INSURANCE AGENTS	Goldsbrough Mort & Co. Ltd., 262 Main St., West Wyalong	232819	1961	Road Match	133m
	STATION & FARM SUPPLIES	Goldsbrough Mort & Co. Ltd., 262 Main St., West Wyalong	233003	1961	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	Goldsbrough, Mart & Co. Ltd., 262 Main St., West Wyalong	233009	1961	Road Match	133m
	BEAUTY SALONS & LADIES' HAIRDRESSERS	Grintell, N., Main St., West Wyalong	232653	1961	Road Match	133m
	CARRIERS & CARTAGE CONTRACTORS	Jameson, R., Main St., West Wyalong	232689	1961	Road Match	133m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Leadbitters, Main St., West Wyalong	232932	1961	Road Match	133m
	DENTISTS	Martin, Main St., West Wyalong	232710	1961	Road Match	133m
	BILLIARD SALOONS	McDonald, J., Main St., West Wyalong	232657	1961	Road Match	133m
	BEAUTY SALONS & LADIES' HAIRDRESSERS	McGarry, P., Main St., West Wyalong	232655	1961	Road Match	133m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Merldith Leadbitters, Main St., West Wyalong	232876	1961	Road Match	133m
	HOTELS-LICENSED	Metropolitan (The), Main St., West Wyalong	232805	1961	Road Match	133m
	BATTERY DISTRIBUTORS	Mid-Western Service Station, Main St., West Wyalong	232649	1961	Road Match	133m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Mid-Western Service Station, Main St., West Wyalong	232877	1961	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Mid-Western Service Station, Main St., West Wyalong	232905	1961	Road Match	133m
	TYRE & TUBE DEALERS	Mid-Western Service Station, Main St., West Wyalong	233033	1961	Road Match	133m

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4	DRAPERS-RETAIL	Nader's, Main St., West Wyalong	232715	1961	Road Match	133m
	BANKS	National Bank of Australasia Ltd., Main St., West Wyalong	232646	1961	Road Match	133m
	STATION & FARM SUPPLIES	New Zealand Loan and Mercantile Agency Co. Ltd., Main St., West Wyalong	233005	1961	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	New Zealand Loan and Mercantile Agency Co. Main St., West Wyalong	233012	1961	Road Match	133m
	INSURANCE AGENTS	New Zealand Loan and Mercantile Agency Co., Main St., West Wyalong	232826	1961	Road Match	133m
	INSURANCE AGENTS	Peel, R. J. and Son, Main St., West Wyalong	232827	1961	Road Match	133m
	AERATED WATER & CORDIAL MANUFACTURERS	Peel, R. J., Main St., West Wyalong	232625	1961	Road Match	133m
	ENGINEERS-GENERAL, MFRG. & MECHANICAL	Peel, R. J., Main St., West Wyalong	232738	1961	Road Match	133m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Peel, R. J., Main St., West Wyalong	232878	1961	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Peel, R. J., Main St., West Wyalong	232906	1961	Road Match	133m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Peel, R. J., Main St., West Wyalong	232934	1961	Road Match	133m
	WELDERS--ELECTRIC & OXY	Peel, R. J., Main St., West Wyalong	233047	1961	Road Match	133m
	MILK VENDORS	Phegan, P., Main St., West Wyalong	232858	1961	Road Match	133m
	HOTELS-LICENSED	Queensland Hotel, Main St., West Wyalong	232806	1961	Road Match	133m
	CLUBS & SPORTING BODIES	Returned Soldiers' Club, Main St., West Wyalong	232700	1961	Road Match	133m
	PICTURE THEATRES	Rio Gardens, Main St., West Wyalong	232963	1961	Road Match	133m
	DRY CLEANERS, PRESSERS & DYERS	Soauls Dry Cleaning Service, 264 Main St., West Wyalong	232719	1961	Road Match	133m
	BATTERY SERVICE STATIONS	Spence, J., Main St., West Wyalong	232651	1961	Road Match	133m
	MOTOR ACCESSORIES & SPARE PARTS DEALERS	Spence, J., Main St., West Wyalong	232881	1961	Road Match	133m
	MOTOR BODY BUILDERS & REPAIRERS	Spence, J., Main St., West Wyalong	232884	1961	Road Match	133m
	MOTOR CAR & TRUCK DEALERS-NEW & USED	Spence, J., Main St., West Wyalong	232893	1961	Road Match	133m
	MOTOR PAINTERS & PANEL BEATERS	Spence, J., Main St., West Wyalong	232921	1961	Road Match	133m
	PLUMBERS' SUPPLIES	Stephenson, R. and G. Main St., West Wyalong	232968	1961	Road Match	133m
	BUILDERS' SUPPLIES	Stephenson, R. and G., Main St., West Wyalong	232676	1961	Road Match	133m
	HARDWARE DEALERS & IRONMONGERS	Stephenson, R. and G., Main St., West Wyalong	232793	1961	Road Match	133m
	JOINERY MANUFACTURERS	Stephenson, R. and G., Main St., West Wyalong	232838	1961	Road Match	133m
	PAINT, VARNISH, OIL & COLOUR MERCHANTS	Stephenson, R. and G., Main St., West Wyalong	232955	1961	Road Match	133m
	TIMBER MERCHANTS & SAWMILLERS	Stephenson, R. and G., Main St., West Wyalong	233021	1961	Road Match	133m
	CARRIERS & CARTAGE CONTRACTORS	Thompson, R. J., Main St., West Wyalong	232691	1961	Road Match	133m
	PICTURE THEATRES	Tivoli Picture Theatres, Main St., West Wyalong	232964	1961	Road Match	133m
	GOVERNMENT DEPARTMENTS	West Wyalong Post Office, Main St., West Wyalong	232772	1961	Road Match	133m
	HOTELS-LICENSED	White Tank Hotel, Main St., West Wyalong	232810	1961	Road Match	133m
	BUILDING CONTRACTOR	A. L. Croft Wine Saloon, Main St., West Wyalong West Wyalong	182437	1950	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	Anthoness, K. G., Main St. West Wyalong	182697	1950	Road Match	133m

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4	BANKS	Bank of N.S.W., Main St. West Wyalong	182387	1950	Road Match	133m
	SOLICITORS	Bloore, R. B., Main St. West Wyalong	182690	1950	Road Match	133m
	SHEEP SHEARING MACHINERY DEALERS	Brissenden, A. and Co. (Agents, Cooper Engineering Co.), Main St. West Wyalong	182685	1950	Road Match	133m
	INSURANCE AGENTS	Brissenden, A. and Co. (Agents, Farmers and Graziers Insrnce.), Main St. West Wyalong	182539	1950	Road Match	133m
	LUBRICATING OILS & GREASES	Brissenden, A. and Co. (Agents, Golden Fleece), Main St West Wyalong	182563	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Brissenden, A. and Co. (Agents, Golden Fleece), Main St. West Wyalong	182624	1950	Road Match	133m
	CYCLE DEALERS, REPAIRERS & ACCESSORIES	Brissenden, A. and Co., Main St. West Wyalong	182441	1950	Road Match	133m
	TRACTOR DEALERS	Brissendon and Co., Main St. West Wyalong	182716	1950	Road Match	133m
	TYRE DEALERS	Brissendon and Co., Main St. West Wyalong	182724	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Brlssenden, A. and Co., Main St. West Wyalong	182362	1950	Road Match	133m
	FOOTWEAR RETAILERS	Brooks, W., Main St. West Wyalong	182473	1950	Road Match	133m
	BUTCHERS-RETAIL	Butler, L. and G., Main St. West Wyalong	182413	1950	Road Match	133m
	HAIRDRESSERS & TOBACCONISTS	Cameron, Harry, Main St. West Wyalong	182512	1950	Road Match	133m
	AUCTIONEERS, STOCK AND PROPERTY SALESMEN	Cattle Bros. Main St., West Wyalong West Wyalong	182372	1950	Road Match	133m
	AUCTIONEERS	Cattle Bros., Main St. West Wyalong	182374	1950	Road Match	133m
	INSURANCE AGENTS	Cattle Bros., Main St. West Wyalong	182540	1950	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	Cattle Bros., Main St. West Wyalong	182698	1950	Road Match	133m
	BABIES' & CHILDREN'S WEAR SPECIALISTS	Children's Store (The), Main St. West Wyalong	182378	1950	Road Match	133m
	BOOT & SHOE REPAIRERS	Collins, H. A., Main St. West Wyalong	182403	1950	Road Match	133m
	PHOTOGRAPHERS-COMMERCIAL & PORTRAIT	Columbia Studios, Main St. West Wyalong	182664	1950	Road Match	133m
	BANKS	Commercial Bank of Australia, Main St. West Wyalong	182388	1950	Road Match	133m
	BANKS	Commonwealth Bank of Australia, Main St. West Wyalong	182389	1950	Road Match	133m
	FLORISTS	Croft, A. L., Main St. West Wyalong	182472	1950	Road Match	133m
	WINE SALOONS	Croft, Al, Main St. West Wyalong	182739	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Curray, M. A., Main St. West Wyalong	182518	1950	Road Match	133m
	GROCERS & GENERAL STOREKEEPERS	Curray, M. F., Main St. West Wyalong	182503	1950	Road Match	133m
	PRODUCE MERCHANTS-RETAIL	Curray, M. F., Main St. West Wyalong	182676	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Darieys Garage, Main St. West Wyalong	182615	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Darleys Garage, Main St. West Wyalong	182363	1950	Road Match	133m
	WELDERS-ELECTRIC & OXY	Darleys Garage, Main St. West Wyalong	182730	1950	Road Match	133m
	WINDMILL MAINTENANCE & INSTALLATION	Darleys Garage, Main St. West Wyalong	182737	1950	Road Match	133m
	FRUITERERS & GREENGROCERS	Dean, L., Main St. West Wyalong	182482	1950	Road Match	133m
	GROCERS & GENERAL STOREKEEPERS	Dean, L., Main St. West Wyalong	182504	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Dean, L., Main St. West Wyalong	182578	1950	Road Match	133m

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4	BUILDERS SUPPLIES	Douglas, J,. Main St. West Wyalong	182410	1950	Road Match	133m
	PAINT, VARNISH, OILS & COLOUR MERCHANTS	Douglas, J., Main St. West Wyalong	182658	1950	Road Match	133m
	ELECTRICAL SUPPLIES & APPLIANCES-RETAIL	Douglas, John, Main St. West Wyalong	182462	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Douglas, John, Main St. West Wyalong	182519	1950	Road Match	133m
	PLUMBERS, GASFITTERS & DRAINLAYERS	Emerton, J. H., Main St. West Wyalong	182671	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	Emmett, G., Main St. West Wyalong	182570	1950	Road Match	133m
	LAUNDRIES	Emmett, K. F., Main St. West Wyalong	182555	1950	Road Match	133m
	HOTELS	Empire Hotel (Chas. M. Prichard), Main St. West Wyalong	182530	1950	Road Match	133m
	SOLICITORS	Evans, G. P. and Englert, Main St. West Wyalong	182691	1950	Road Match	133m
	BABIES' & CHILDREN'S WEAR SPECIALISTS	F. and G. Stores, Main St. West Wyalong	182379	1950	Road Match	133m
	BOOKSELLERS &/OR STATIONERS	F. and G. Stores, Main St. West Wyalong	182400	1950	Road Match	133m
	CHINA, CRYSTAL & EARTHENWARE DEALERS	F. and G. Stores, Main St. West Wyalong	182432	1950	Road Match	133m
	DRAPERS-RETAIL	F. and G. Stores, Main St. West Wyalong	182450	1950	Road Match	133m
	DRESS FABRIC SPECIALISTS	F. and G. Stores, Main St. West Wyalong	182455	1950	Road Match	133m
	FROCK SALONS	F. and G. Stores, Main St. West Wyalong	182477	1950	Road Match	133m
	FURNITURE & FURNISHINGS	F. and G. Stores, Main St. West Wyalong	182485	1950	Road Match	133m
	LINGERIE SPECIALISTS	F. and G. Stores, Main St. West Wyalong	182556	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	F. and G. Stores, Main St. West Wyalong	182571	1950	Road Match	133m
	TOY DEALERS-RETAIL	F. and G. Stores, Main St. West Wyalong	182713	1950	Road Match	133m
	TRAVEL GOODS-RETAIL	F. and G. Stores, Main St. West Wyalong	182719	1950	Road Match	133m
	BAKERS & PASTRYCOOKS	Fraser, E. D., Main St. West Wyalong	182382	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Fraser, E. D., Main St. West Wyalong	182579	1950	Road Match	133m
	GALVANISED IRON WORKERS	Fraser, Harry, Main St. West Wyalong	182488	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Fraser, Harry, Main St. West Wyalong	182520	1950	Road Match	133m
	PLUMBERS, GASFITTERS & DRAINLAYERS	Fraser, Harry, Main St. West Wyalong	182672	1950	Road Match	133m
	WOOL BUYERS	Frogley, A., Main St. West Wyalong	182741	1950	Road Match	133m
	INSURANCE AGENTS	Frogley, Alex (Agent, Bankers and 'Traders Insrnce. Co. Ltd.), Main St. West Wyalong	182541	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Frogley, Alex (Agent, Neptune Oil Co. Ltd.), Main St. West Wyalong	182625	1950	Road Match	133m
	SKIN & HIDE DEALERS	Frogley, Alex, Main St. West Wyalong	182687	1950	Road Match	133m
	GOVERNMENT DEPARTMENTS	G. Minos Main Street West Wyalong West Wyalong	182499	1950	Road Match	133m
	PLUMBERS, GASFITTERS & DRAINLAYERS	Gathercole, E. A., Main St. West Wyalong	182673	1950	Road Match	133m
	BEAUTY SALONS & LADIES HAIRDRESSERS	Geraldine Salon, Main St. West Wyalong	182396	1950	Road Match	133m
	JEWELLERS & WATCHMAKERS	Gibson, F. W., Main St. West Wyalong	182551	1950	Road Match	133m
	HOTELS	Globe Hotel (A. Henderson, Propr.), Main St. West Wyalong	182529	1950	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	CAFES, TEA ROOMS & COFFEE LOUNGES	Golden Bell Cafe, Main St. West Wyalong	182416	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Golden Bell, Main St. West Wyalong	182580	1950	Road Match	133m
	DENTISTS	Goner, J. E., Main St, West Wyalong	182448	1950	Road Match	133m
	WELDERS-ELECTRIC & OXY	Greliman, R., Main St. West Wyalong	182731	1950	Road Match	133m
	INSURANCE AGENTS	Grellman, F. W., Main St. West Wyalong	182542	1950	Road Match	133m
	MOTOR BODY BUILDERS & REPAIRERS	Grellman, F. W., Main St. West Wyalong	182601	1950	Road Match	133m
	MOTOR CAR & TRUCK DEALERS	Grellman, F. W., Main St. West Wyalong	182605	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Grellman, F. W., Main St. West Wyalong	182616	1950	Road Match	133m
	MOTOR PAINTERS & PANEL BEATERS	Grellman, F. W., Main St. West Wyalong	182632	1950	Road Match	133m
	BLACKSMITHS & FARRIERS	Grellman, R., Main St. West Wyalong	182398	1950	Road Match	133m
	HAIRDRESSERS & TOBACCONISTS	Hall, Wm. G., Main St. West Wyalong	182513	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Hart and Baker (Agents, Purr Pull), Main St. West Wyalong	182626	1950	Road Match	133m
	SKIN & HIDE DEALERS	Hart and Baker, Main St. West Wyalong	182688	1950	Road Match	133m
	WOOL BUYERS	Hart and Baker, Main St. West Wyalong	182742	1950	Road Match	133m
	DRAPERS-RETAIL	Helyar, H. R. and Co., Main St. West Wyalong	182451	1950	Road Match	133m
	FOOTWEAR RETAILERS	Helyar, H. R. and Co., Main St. West Wyalong	182474	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	Helyar, H. R. and Co., Main St. West Wyalong	182572	1950	Road Match	133m
	OUTFITTERS-LADIES	Helyar, H. R. and Co., Main St. West Wyalong	182655	1950	Road Match	133m
	TRAVEL GOODS-RETAIL	Helyar, H. R. and Co., Main St. West Wyalong	182720	1950	Road Match	133m
	DRESSMAKERS	Innes, Mrs. M., Main St. West Wyalong	182457	1950	Road Match	133m
	CARRIERS & CARTAGE CONTRACTORS	Jamelson, R., Main St. West Wyalong	182425	1950	Road Match	133m
	FROCK SALONS	Johnston, W. C., Main St. West Wyalong	182478	1950	Road Match	133m
	LINGERIE SPECIALISTS	Johnston, W. C., Main St. West Wyalong	182557	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	Kearins, Pat, Main St. West Wyalong	182573	1950	Road Match	133m
	TAILORS	Kearins, Pat, Main St. West Wyalong	182702	1950	Road Match	133m
	TRAVEL GOODS-RETAIL	Kearins, Pat, Main St. West Wyalong	182721	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Kendall, N. H., Main St. West Wyalong	182581	1950	Road Match	133m
	BLACKSMITHS & FARRIERS	Kendall, W., Main St. West Wyalong	182399	1950	Road Match	133m
	WELDERS-ELECTRIC & OXY	Kendall, W., Main St. West Wyalong	182733	1950	Road Match	133m
	BOOKSELLERS &/OR STATIONERS	Lamont, J. L., Main St. West Wyalong	182401	1950	Road Match	133m
	PRINTERS-GENERAL	Lamont, J. L., Main St. West Wyalong	182674	1950	Road Match	133m
	CYCLE DEALERS, REPAIRERS & ACCESSORIES	Leadbitters Motor Garage, Main St. West Wyalong	182442	1950	Road Match	133m
	ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Leadbitters Motor Garage, Main St. West Wyalong	182467	1950	Road Match	133m
	TYRE DEALERS	Leadbitters Motor Garage, Main St. West Wyalong	182725	1950	Road Match	133m
	BATTERY SERVICE STATIONS	Leadbltters Motor Garage, Main St. West Wyalong	182394	1950	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	MOTOR ACCESSORIES DEALERS	Leadbltters Motor Garage, Main St. West Wyalong	182596	1950	Road Match	133m
	MOTOR CAR & TRUCK DEALERS	Leadbltters Motor Garage, Main St. West Wyalong	182606	1950	Road Match	133m
	MOTOR ELECTRICIANS	Leadbltters Motor Garage, Main St. West Wyalong	182612	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Leadbltters Motor Garage, Main St. West Wyalong	182618	1950	Road Match	133m
	MOTOR PAINTERS & PANEL BEATERS	Leadbltters Motor Garage, Main St. West Wyalong	182633	1950	Road Match	133m
	MOTOR PARKING STATIONS	Leadbltters Motor Garage, Main St. West Wyalong	182637	1950	Road Match	133m
	MOTOR TRIMMERS	Leadbltters Motor Garage, Main St. West Wyalong	182646	1950	Road Match	133m
	CAFES, TEA ROOMS & COFFEE LOUNGES	Luxo Cafe, Main St. West Wyalong	182417	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Luxo Cafe, Main St. West Wyalong	182583	1950	Road Match	133m
	SKIN & HIDE DEALERS	Lyons, J. H. C., Main St. West Wyalong	182689	1950	Road Match	133m
	FROCK SALONS	Mary Ann Frocks, Main St. West Wyalong	182479	1950	Road Match	133m
	MILLINERY-RETAIL	Mary Ann Frocks, Main St. West Wyalong	182591	1950	Road Match	133m
	HANDBAG SPECIALISTS	Mary Ann,Frocks, Main St. West Wyalong	182516	1950	Road Match	133m
	ACCOUNTANTS & AUDITORS	McGee, D. P., Main St. West Wyalong	182357	1950	Road Match	133m
	SOLICITORS	McKenzie, D. E. Main St. West Wyalong	182693	1950	Road Match	133m
	CHEMISTS	McNamara, F. J., Main St. West Wyalong	182430	1950	Road Match	133m
	PHOTO DEVELOPING & PRINTING SERVICES	McNamara, F. J., Main St. West Wyalong	182665	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	Meagher, John and Co, Pty. Ltd., Main St. West Wyalong	182574	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182364	1950	Road Match	133m
	DRAPERS-RETAIL	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182452	1950	Road Match	133m
	FANCY GOODS DEALERS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182468	1950	Road Match	133m
	FOOTWEAR RETAILERS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182475	1950	Road Match	133m
	FURNITURE & FURNISHINGS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182486	1950	Road Match	133m
	GROCERS & GENERAL STOREKEEPERS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182506	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182521	1950	Road Match	133m
	OUTFITTERS-LADIES	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182656	1950	Road Match	133m
	WINE & SPIRIT MERCHANTS	Meagher, John and Co. Pty. Ltd., Main St. West Wyalong	182738	1950	Road Match	133m
	MOTOR CAR & TRUCK DEALERS	Meagher-Player Service Station, Main St. West Wyalong	182607	1950	Road Match	133m
	TYRE RETREADERS & VULCANIZERS	Meagher-Player Service Station, Main St. West Wyalong	182728	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Meagher-Player, Main St. West Wyalong	182619	1950	Road Match	133m
	TYRE DEALERS	Meagher-Player, Main St. West Wyalong	182726	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Messner Bros. (Agents, Atlantic Union Oil Co.), Main St. West Wyalong	182627	1950	Road Match	133m
	STATION & FARM SUPPLIES	Messner Bros. (Agents, F. W. William Ltd.), Main St. West Wyalong	182696	1950	Road Match	133m
	FARM & STATION SUPPLIES	Messner Bros. (Agents, F. W. Williams and Co. Pty Ltd.), Main St. West Wyalong	182470	1950	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	PRODUCE MERCHANTS-RETAIL	Messner Bros. Main St. West Wyalong	182677	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Messner Bros., Main St. West Wyalong	182365	1950	Road Match	133m
	BUILDERS SUPPLIES	Messner Bros., Main St. West Wyalong	182411	1950	Road Match	133m
	SADDLERS	Messner, E. L., Main St. West Wyalong	182680	1950	Road Match	133m
	AUCTIONEERS	Messner, R. S. & Co. Main St. West Wyalong	182373	1950	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	Messner, R. S. and Co, Main St. West Wyalong	182699	1950	Road Match	133m
	WOOL BROKERS	Messner, R. S. and Co. (Agents, Goldsbrough Mort and Co.), Main St. West Wyalong	182740	1950	Road Match	133m
	INSURANCE AGENTS	Messner, R. S. and Co. (Agents, N.Z. Irisrnce. And National Mutual Life), Main St. West Wyalong	182544	1950	Road Match	133m
	AUCTIONEERS	Messner, R. S. and Co., Main St. West Wyalong	182376	1950	Road Match	133m
	COMMISSION AGENTS	Messner, R. S. and Co., Main St. West Wyalong	182439	1950	Road Match	133m
	HOTELS	Metropolitan (The), Main St. West Wyalong	182532	1950	Road Match	133m
	DELICATESSENS	Minos, G., Main St. West Wyalong	182446	1950	Road Match	133m
	FRUITERERS & GREENGROCERS	Minos, G., Main St. West Wyalong	182483	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Minos, G., Main St. West Wyalong	182584	1950	Road Match	133m
	FRUITERERS & GREENGROCERS	Moore, F. A., Main St. West Wyalong	182484	1950	Road Match	133m
	GROCERS & GENERAL STOREKEEPERS	Moran and Cato (N.S.W.) Pty. Ltd., Main St. West Wyalong	182507	1950	Road Match	133m
	GROCERS & GENERAL STOREKEEPERS	Muir, O. C., Main St. West Wyalong	182508	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Muir, O. C., Main St. West Wyalong	182522	1950	Road Match	133m
	DRAPERS-RETAIL	Nader's, Main St. West Wyalong	182453	1950	Road Match	133m
	DRESS FABRIC SPECIALISTS	Nader's, Main St. West Wyalong	182456	1950	Road Match	133m
	FROCK SALONS	Nader's, Main St. West Wyalong	182480	1950	Road Match	133m
	LINGERIE SPECIALISTS	Nader's, Main St. West Wyalong	182558	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	Nader's, Main St. West Wyalong	182575	1950	Road Match	133m
	MILLINERY-RETAIL	Nader's, Main St. West Wyalong	182592	1950	Road Match	133m
	BANKS	National Bank of Australasia Ltd., Main St. West Wyalong	182390	1950	Road Match	133m
	INSURANCE AGENTS	New Zealand Loan and Mercantile Agency Co., Main St. West Wyalong	182545	1950	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	New Zealand Loan and Mercantile Main St. West Wyalong	182700	1950	Road Match	133m
	BUTCHERS-RETAIL	Nicholson and Pettit, Main St. West Wyalong	182414	1950	Road Match	133m
	CAFES, TEA ROOMS & COFFEE LOUNGES	Paragon (The), Main St. West Wyalong	182418	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Paragon (The), Main St. West Wyalong	182585	1950	Road Match	133m
	BOOT & SHOE REPAIRERS	Paspalas, P. Main St. West Wyalong	182404	1950	Road Match	133m
	HOTELS	Post Office Hotel, Main St. West Wyalong	182533	1950	Road Match	133m
	CARRIERS & CARTAGE CONTRACTORS	Prothero, J. M., Main St. West Wyalong	182427	1950	Road Match	133m
	PICTURE THEATRES	Rio Gardens, Main St. West Wyalong	182669	1950	Road Match	133m
	FROCK SALONS	Robin-Lea Frock Salon, Main St. West Wyalong	182481	1950	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	MILLINERY-RETAIL	Robin-Lea Frock Salon, Main St. West Wyalong	182593	1950	Road Match	133m
	PHOTO DEVELOPING & PRINTING SERVICES	Rossell, L., Main St. West Wyalong	182666	1950	Road Match	133m
	VETERINARY SUPPLIES	Rossell, L., Main St. West Wyalong	182729	1950	Road Match	133m
	HOTELS	Royal Hotel (V. Vagg, Propr.), Main St. West Wyalong	182535	1950	Road Match	133m
	BANKS	Rural Bank of N.S.W., Main St. West Wyalong	182391	1950	Road Match	133m
	DENTISTS	Rushton, E. G., Main St. West Wyalong	182449	1950	Road Match	133m
	CHEMISTS	Russell, Leonard, Main St. West Wyalong	182431	1950	Road Match	133m
	BAKERS & PASTRYCOOKS	Sanderson, L. and A., Main St. West Wyalong	182384	1950	Road Match	133m
	CAFES, TEA ROOMS & COFFEE LOUNGES	Sanderson, L. and A., Main St. West Wyalong	182419	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Sanderson, L. and A., Main St. West Wyalong	182586	1950	Road Match	133m
	PHOTO DEVELOPING & PRINTING SERVICES	Scott') Radio and Gift Store, Main St. West Wyalong	182667	1950	Road Match	133m
	AIR SERVICES BOOKING AGENTS	Scotts Radio and Gift Store (Agents, A.N.A-), Main, St. West Wyalong	182370	1950	Road Match	133m
	TOURIST BUREAUX	Scotts Radio and Gift Store (Agents, Govt. Tourist Bureau), Main St. West Wyalong	182711	1950	Road Match	133m
	INSURANCE AGENTS	Scotts Radio and Gift Store (Agents, Lloyds Brokers, Edward Lumley and Son Pty, Ltd.), Main St. West Wyalong	182546	1950	Road Match	133m
	BATTERY SERVICE STATIONS	Scotts Radio and Gift Store, Main St. West Wyalong	182395	1950	Road Match	133m
	CHINA, CRYSTAL & EARTHENWARE DEALERS	Scotts Radio and Gift Store, Main St. West Wyalong	182433	1950	Road Match	133m
	ELECTRICAL SUPPLIES & APPLIANCES-RETAIL	Scotts Radio and Gift Store, Main St. West Wyalong	182464	1950	Road Match	133m
	GIFT SHOPS	Scotts Radio and Gift Store, Main St. West Wyalong	182489	1950	Road Match	133m
	HANDBAG SPECIALISTS	Scotts Radio and Gift Store, Main St. West Wyalong	182517	1950	Road Match	133m
	JEWELLERS & WATCHMAKERS	Scotts Radio and Gift Store, Main St. West Wyalong	182552	1950	Road Match	133m
	RADIO & REFRIGERATOR DEALERS & SERVICEMEN	Scotts Radio and Gift Store, Main St. West Wyalong	182679	1950	Road Match	133m
	SPORTS GOODS RETAILERS	Scotts Radio and Gift Store, Main St. West Wyalong	182694	1950	Road Match	133m
	TENNIS RACQUET RESTRINGERS & REPAIRERS	Scotts Radio and Gift Store, Main St. West Wyalong	182709	1950	Road Match	133m
	TOY DEALERS-RETAIL	Scotts Radio and Gift Store, Main St. West Wyalong	182714	1950	Road Match	133m
	TRAVEL GOODS-RETAIL	Scotts Radio and Gift Store; Main St. West Wyalong	182722	1950	Road Match	133m
	TAILORS	Sharrock, L., Main St. West Wyalong	182703	1950	Road Match	133m
	MOTOR ACCESSORIES DEALERS	Simpson Bros., Main St. West Wyalong	182597	1950	Road Match	133m
	MOTOR CAR & TRUCK DEALERS	Simpson Bros., Main St. West Wyalong	182608	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Simpson Bros., Main St. West Wyalong	182620	1950	Road Match	133m
	MOTOR TOWING SERVICES	Simpson Bros., Main St. West Wyalong	182643	1950	Road Match	133m
	MOTOR TRIMMERS	Simpson Bros., Main St. West Wyalong	182648	1950	Road Match	133m
	WELDERS-ELECTRIC & OXY	Simpson Bros., Main St. West Wyalong	182734	1950	Road Match	133m
	COOL STORES	Smith, J. V. Main St. West Wyalong	182440	1950	Road Match	133m

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4	INSURANCE AGENTS	Smith, James (Agent, British Traders Insrnce. CO. Ltd. and Prudential Life Assrnce.), Main St. West Wyalong	182547	1950	Road Match	133m
	ACCOUNTANTS & AUDITORS	Smith, James, Main St. West Wyalong	182358	1950	Road Match	133m
	STOCK, STATION & REAL ESTATE AGENTS	Smith, James, Main St. West Wyalong	182701	1950	Road Match	133m
	TAXATION CONSULTANTS	Smith, James, Main St. West Wyalong	182705	1950	Road Match	133m
	DRESSMAKERS	Smith, Miss Joy, Main St. West Wyalong	182458	1950	Road Match	133m
	TAILORS	Smith, Norman, Main St. West Wyalong	182704	1950	Road Match	133m
	ICE MANUFACTURERS	Smith, T. V., Main St. West Wyalong	182538	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Smith, T. V., Main St. West Wyalong	182628	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Soudan, H., Main St. West Wyalong	182523	1950	Road Match	133m
	CANVAS GOODS DEALERS	Soudan, R. M., Main St. West Wyalong	182421	1950	Road Match	133m
	CHINA, CRYSTAL & EARTHENWARE DEALERS	Soudan, R. M., Main St. West Wyalong	182434	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Souden, R. M. (Agent, C.0.12., Castrol Oils), Main St. West Wyalong	182629	1950	Road Match	133m
	PAINT, VARNISH, OILS & COLOUR MERCHANTS	Souden, R. M., Main St. West Wyalong	182659	1950	Road Match	133m
	FURNITURE AND HARDWARE EMPORIUM	Souden's Main Street West Wyalong West Wyalong	182500	1950	Road Match	133m
	DRY CLEANERS, PRESSERS & DYERS	Spaul's, Dry Cleaning Service, Main St. West Wyalong	182459	1950	Road Match	133m
	MOTOR BODY BUILDERS & REPAIRERS	Spence, J., Main St. West Wyalong	182602	1950	Road Match	133m
	MOTOR PAINTERS & PANEL BEATERS	Spence, J., Main St. West Wyalong	182635	1950	Road Match	133m
	MOTOR TRIMMERS	Spence, J., Main St. West Wyalong	182649	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Stanley, R. G. and Co., Main St. West Wyalong	182366	1950	Road Match	133m
	MOTOR ACCESSORIES DEALERS	Stanley, R. G. and Co., Main St. West Wyalong	182599	1950	Road Match	133m
	MOTOR CAR & TRUCK DEALERS	Stanley, R. G. and Co., Main St. West Wyalong	182609	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Stanley, R. G. and Co., Main St. West Wyalong	182621	1950	Road Match	133m
	MOTOR TOWING SERVICES	Stanley, R. G. and Co., Main St. West Wyalong	182644	1950	Road Match	133m
	FOOTWEAR RETAILERS	Stenner's Shoe Store, Main St. West Wyalong	182476	1950	Road Match	133m
	BUILDERS SUPPLIES	Stephenson, R. and G., Main St. West Wyalong	182412	1950	Road Match	133m
	GLASS MERCHANTS	Stephenson, R. and G., Main St. West Wyalong	182491	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Stephenson, R. and G., Main St. West Wyalong	182524	1950	Road Match	133m
	JOINERS	Stephenson, R. and G., Main St. West Wyalong	182554	1950	Road Match	133m
	PAINT, VARNISH, OILS & COLOUR MERCHANTS	Stephenson, R. and G., Main St. West Wyalong	182660	1950	Road Match	133m
	TIMBER MERCHANTS	Stephenson, R. and G., Main St. West Wyalong	182710	1950	Road Match	133m
	DRAPERS-RETAIL	Strassers Pty. Ltd, Main St. West Wyalong	182454	1950	Road Match	133m
	OUTFITTERS-LADIES	Strassers Pty. Ltd. Main St. West Wyalong	182657	1950	Road Match	133m
	BABIES' & CHILDREN'S WEAR SPECIALISTS	Strassers Pty. Ltd., Main St. West Wyalong	182380	1950	Road Match	133m
	MERCERS & GENT.'S OUTFITTERS	Strassers Pty. Ltd., Main St. West Wyalong	182576	1950	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	CYCLE DEALERS, REPAIRERS & ACCESSORIES	Stribling, J., Main St. West Wyalong	182443	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	Tait, E. Main St. West Wyalong	182588	1950	Road Match	133m
	BAKERS & PASTRYCOOKS	Tait, E., Main St. West Wyalong	182385	1950	Road Match	133m
	HOTELS	Tattersall Hotel, Main St. West Wyalong	182536	1950	Road Match	133m
	PICTURE THEATRES	Tivoli Picture Theatres, Main St. West Wyalong	182670	1950	Road Match	133m
	GROCERS & GENERAL STOREKEEPERS	Townsend Bros., Main St. West Wyalong	182511	1950	Road Match	133m
	DRY CLEANERS, PRESSERS & DYERS	Wesley Dry Cleaners, Main St. West Wyalong	182460	1950	Road Match	133m
	WELDERS-ELECTRIC & OXY	West Wyaiong Motors (H. Paul, Propr.), Main St. West Wyalong	182735	1950	Road Match	133m
	NEWSPAPERS	West Wyalong Advocate, Main St. West Wyalong	182654	1950	Road Match	133m
	PRINTERS-GENERAL	West Wyalong Advocate, Main St. West Wyalong	182675	1950	Road Match	133m
	INSURANCE AGENTS	West Wyalong Motors (Agents, Eagle Star Insrnce, Co.), Main St. West Wyalong	182548	1950	Road Match	133m
	MOTOR ACCESSORIES DEALERS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182600	1950	Road Match	133m
	MOTOR BODY BUILDERS & REPAIRERS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182603	1950	Road Match	133m
	MOTOR ELECTRICIANS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182613	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182622	1950	Road Match	133m
	MOTOR PAINTERS & PANEL BEATERS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182636	1950	Road Match	133m
	MOTOR PARKING STATIONS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182638	1950	Road Match	133m
	MOTOR RADIATOR SPECIALISTS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182639	1950	Road Match	133m
	MOTOR STEAM CLEANING	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182641	1950	Road Match	133m
	MOTOR TOWING SERVICES	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182645	1950	Road Match	133m
	MOTOR TRIMMERS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182650	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	West Wyalong Motors, Main St. West Wyalong	182367	1950	Road Match	133m
	MOTOR CAR & TRUCK DEALERS	West Wyalong Motors, Main St. West Wyalong	182610	1950	Road Match	133m
	FANCY GOODS DEALERS	West Wyalong Newsagency (Downie and Finlay), Main St West Wyalong	182469	1950	Road Match	133m
	BOOKSELLERS &/OR STATIONERS	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182402	1950	Road Match	133m
	GIFT SHOPS	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182490	1950	Road Match	133m
	JEWELLERS & WATCHMAKERS	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182553	1950	Road Match	133m
	MUSIC-SHEET-RETAILERS & MUSICAL INSTRUMENT DEALERS	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182651	1950	Road Match	133m
	NEWSAGENTS	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182653	1950	Road Match	133m
	PHOTO DEVELOPING & PRINTING SERVICES	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182668	1950	Road Match	133m
	SPORTS GOODS RETAILERS	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182695	1950	Road Match	133m
	TOY DEALERS-RETAIL	West Wyalong Newsagency (Downie and Finlay), Main St. West Wyalong	182715	1950	Road Match	133m
	GOVERNMENT DEPARTMENTS	West Wyalong Post Office, Main St. West Wyalong	182497	1950	Road Match	133m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
4	TYRE DEALERS	Wheat Growers' Union of N.S.W. Co-op, Society Ltd., Main St. West Wyalong	182727	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Wheat Growers' Union of N.S.W. Co-op. Society Ltd., Main St. West Wyalong	182368	1950	Road Match	133m
	HARDWARE DEALERS &/OR IRONMONGERS	Wheat Growers Union of N.S.W. Co-op. Society Ltd., Main St. West Wyalong	182525	1950	Road Match	133m
	CAFES, TEA ROOMS & COFFEE LOUNGES	White Rose, Main St. West Wyalong	182420	1950	Road Match	133m
	MILK BARS &/OR CONFECTIONERS	White Rose, Main St. West Wyalong	182590	1950	Road Match	133m
	HOTELS	White Tank Hotel, Main St. West Wyalong	182537	1950	Road Match	133m
	HAIRDRESSERS & TOBACCONISTS	Wilder, Norm, Main St. West Wyalong	182514	1950	Road Match	133m
	BABIES' & CHILDREN'S WEAR SPECIALISTS	Wood, Mrs. E. and Co., Main St. West Wyalong	182381	1950	Road Match	133m
	HAIRDRESSERS & TOBACCONISTS	Wright, Ron, Main St. West Wyalong	182515	1950	Road Match	133m
	BEAUTY SALONS & LADIES HAIRDRESSERS	Wright, Ron., Main St. West Wyalong	182397	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Wyse Bros, Main St. West Wyalong	182369	1950	Road Match	133m
	MOTOR OIL & SPIRIT MERCHANTS	Wyse Bros. (Agents, Caltex), Main St. West Wyalong	182630	1950	Road Match	133m
	INSURANCE AGENTS	Wyse Bros. (Agents, Queensland Insrnce. Co. Ltd.), Main St. West Wyalong	182550	1950	Road Match	133m
	AGRICULTURAL MACHINERY DEALERS	Wyse Bros. Moin St. West Wyalong	182361	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Wyse Bros., Main St. West Wyalong	182623	1950	Road Match	133m
	PAINT, VARNISH, OILS & COLOUR MERCHANTS	Wyse Bros., Main St. West Wyalong	182661	1950	Road Match	133m
	TRACTOR REPAIR SPECIALISTS	Wyse Bros., Main St. West Wyalong	182718	1950	Road Match	133m
	WELDERS-ELECTRIC & OXY	Wyse Bros., Main St. West Wyalong	182736	1950	Road Match	133m
5	NEWSAGENTS	Ferguson, T. & M. Neeld St., West Wyalong	135226	1982	Road Match	147m
	GARDEN SUPPUES	Peel, E. M. Neeld St., West Wyalong	135064	1982	Road Match	147m
	GROCERS & GENERAL STOREKEEPERS	Bland, G. J., Nield St., Wyalong, West Wyalong	232773	1961	Road Match	147m

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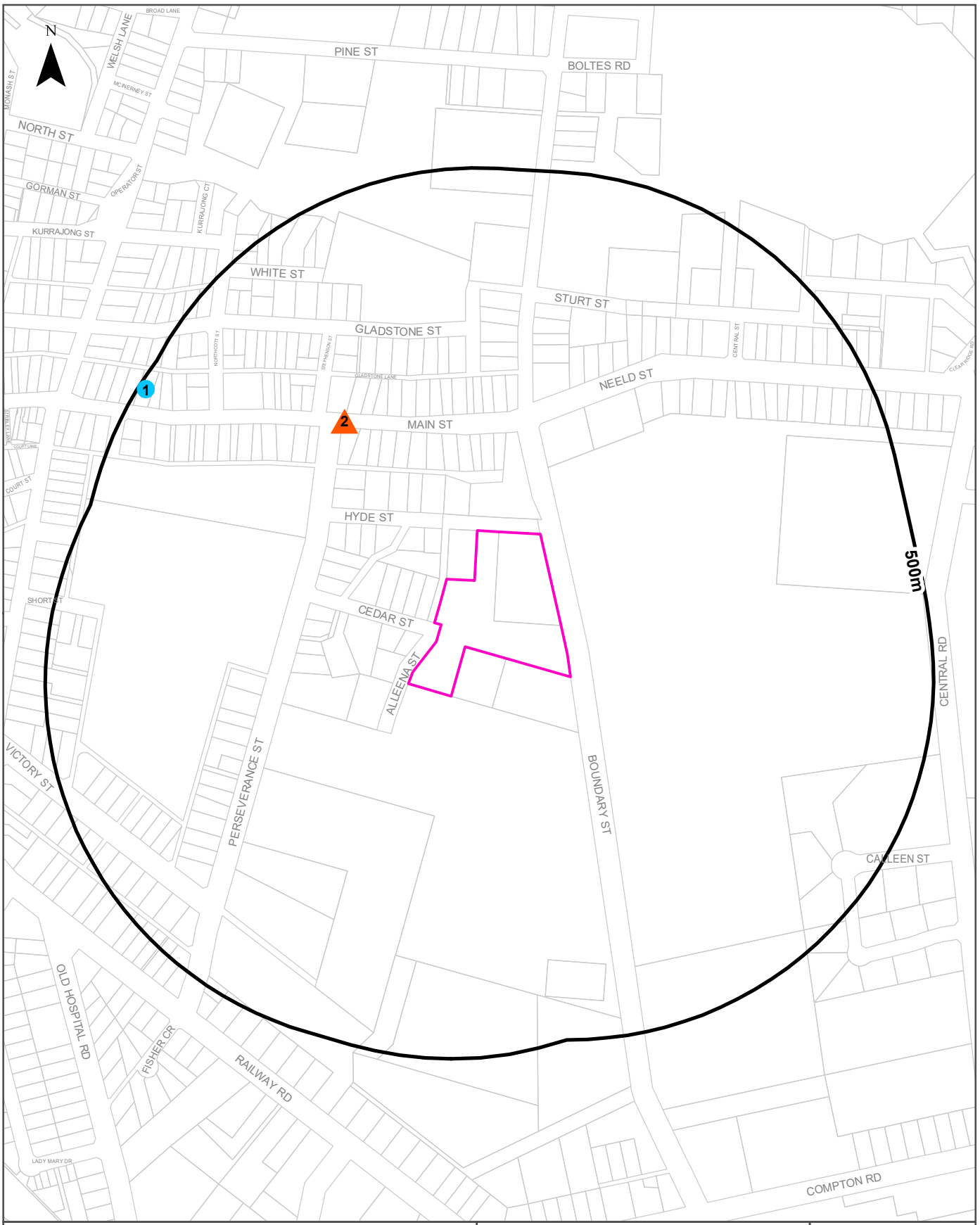
Dry Cleaners, Motor Garages & Service Stations

Hyde Street, West Wyalong, NSW 2671



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: 0 100 200 300 400 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018

Historical Business Directories

Hyde Street, West Wyalong, NSW 2671

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 SERVICE STATIONS-PETROL, OILS, Etc.	Electromotive Service Station, 55 Main St. West Wyalong	554251	1970	Premise Match	475m	North West

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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
2	MOTOR GARAGES & SERVICE STATIONS	Broderick. J. (Machinery) Pty. Ltd., Main St	123953	1991	Road Match	133m
	MOTOR GARAGES &/OR ENGINEERS &/OR SERVICE STATIONS.	Broderick, J Pty. Ltd., Main St., West Wyalong	135187	1982	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Broderick, J. (Machinery) Pty. Ltd., Main St. West Wyalong	554218	1970	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Aberline, A., Main St., West Wyalong	232896	1961	Road Match	133m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Aberline, A., Maln St., West Wyalong	232924	1961	Road Match	133m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Leadbitters, Main St., West Wyalong	232932	1961	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Mid-Western Service Station, Main St., West Wyalong	232905	1961	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Peel, R. J., Main St., West Wyalong	232906	1961	Road Match	133m
	MOTOR SERVICE STATIONS-PETROL, OILS, ETC.	Peel, R. J., Main St., West Wyalong	232934	1961	Road Match	133m
	DRY CLEANERS, PRESSERS & DYERS	Soauls Dry Cleaning Service, 264 Main St., West Wyalong	232719	1961	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Darieys Garage, Main St. West Wyalong	182615	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Grellman, F. W., Main St. West Wyalong	182616	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Leadbltters Motor Garage, Main St. West Wyalong	182618	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Meagher-Player, Main St. West Wyalong	182619	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Simpson Bros., Main St. West Wyalong	182620	1950	Road Match	133m
	DRY CLEANERS, PRESSERS & DYERS	Spaul's, Dry Cleaning Service, Main St. West Wyalong	182459	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Stanley, R. G. and Co., Main St. West Wyalong	182621	1950	Road Match	133m
	DRY CLEANERS, PRESSERS & DYERS	Wesley Dry Cleaners, Main St. West Wyalong	182460	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	West Wyalong Motors (H. Paul, Propr.), Main St. West Wyalong	182622	1950	Road Match	133m
	MOTOR GARAGES & ENGINEERS	Wyse Bros., Main St. West Wyalong	182623	1950	Road Match	133m

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Aerial Imagery 2020

Hyde Street, West Wyalong, NSW 2671

Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020

Aerial Imagery 2015

Hyde Street, West Wyalong, NSW 2671

Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020

Aerial Imagery 2011

Hyde Street, West Wyalong, NSW 2671

Scale:
0 30 60 90 120
Meters

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Coordinate System:
GDA 1994 MGA Zone 56

Date: 21 December 2020

Aerial Imagery 2006

Hyde Street, West Wyalong, NSW 2671

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0 30 60 90 120 Meters

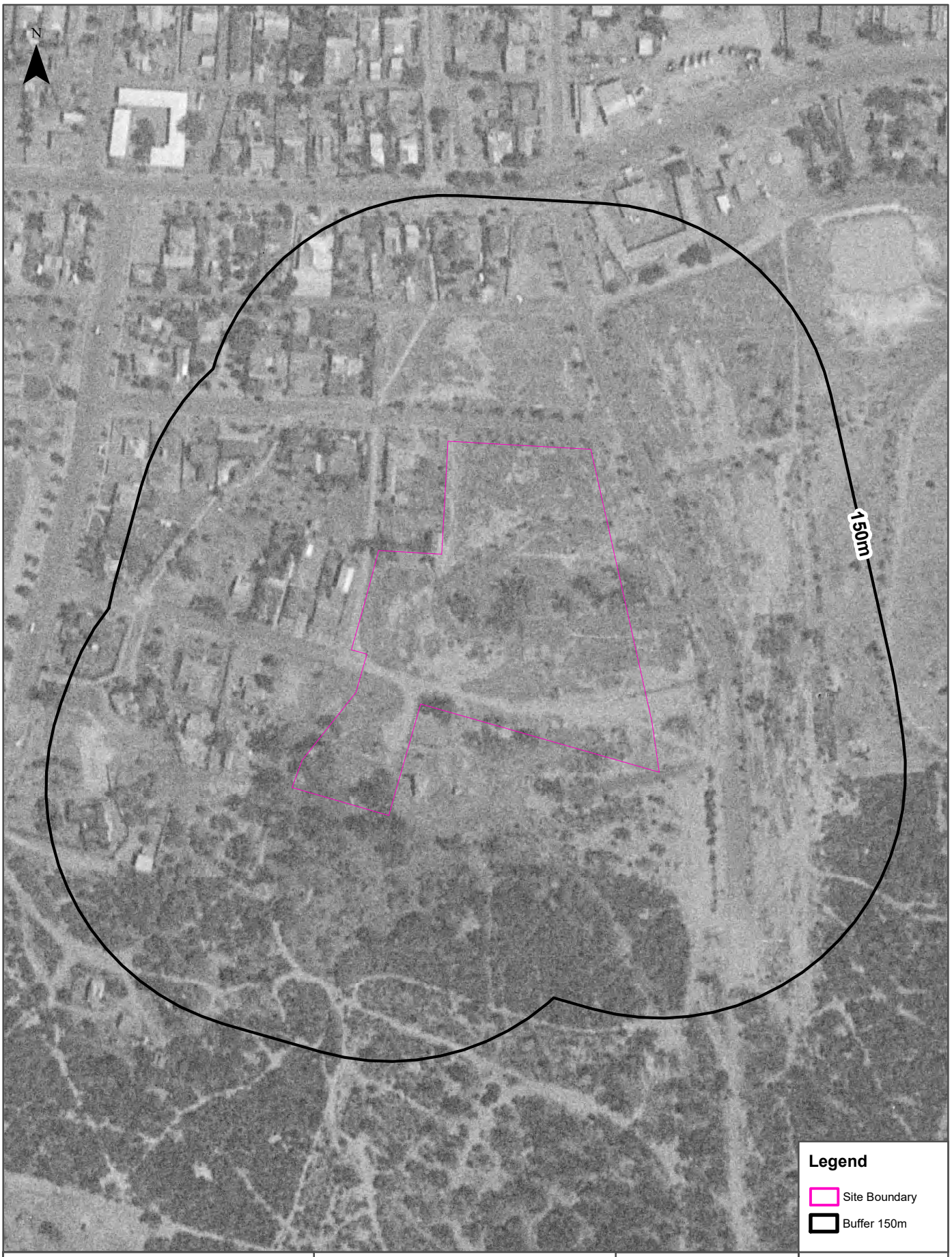
Aerial Imagery 1996

Hyde Street, West Wyalong, NSW 2671

Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 21 December 2020
0 30 60 90 120 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

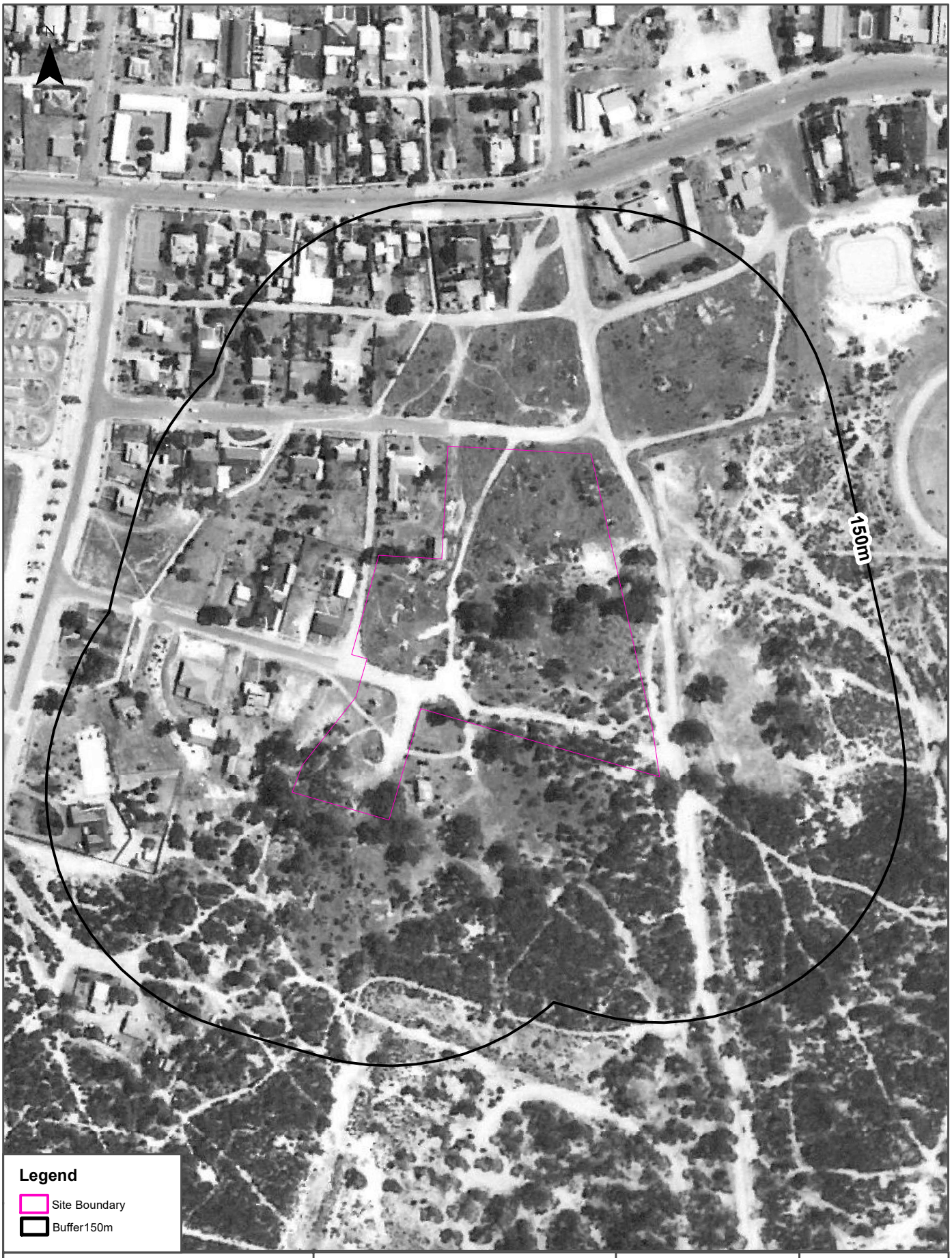
Aerial Imagery 1989

Hyde Street, West Wyalong, NSW 2671



Aerial Imagery 1981

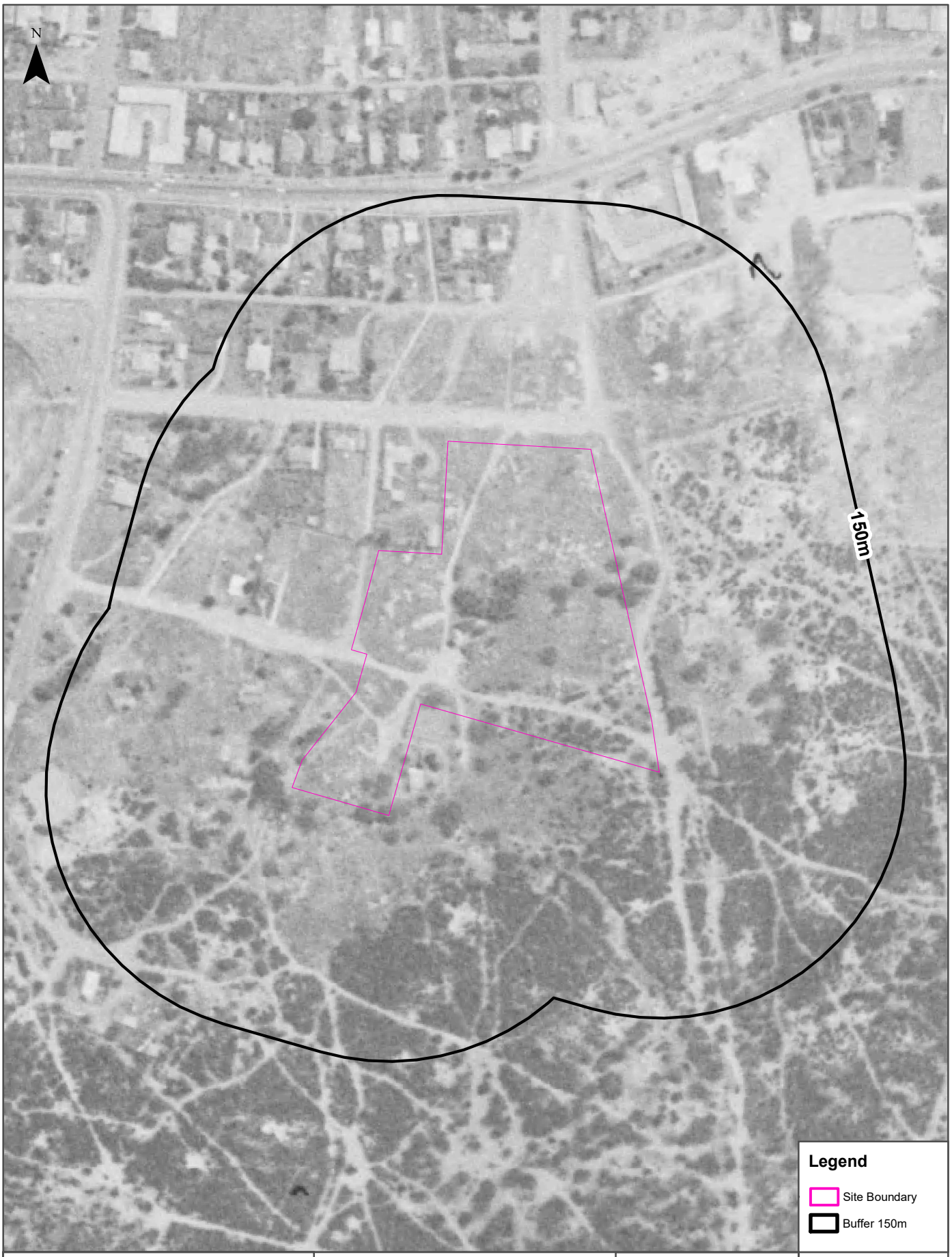
Hyde Street, West Wyalong, NSW 2671



Scale:	Data Source Aerial Imagery:	Coordinate System:	Date: 21 December 2020
0 30 60 90 120 Meters	© NSW Department of Customer Service	GDA 1994 MGA Zone 56	

Aerial Imagery 1973

Hyde Street, West Wyalong, NSW 2671



Aerial Imagery 1968

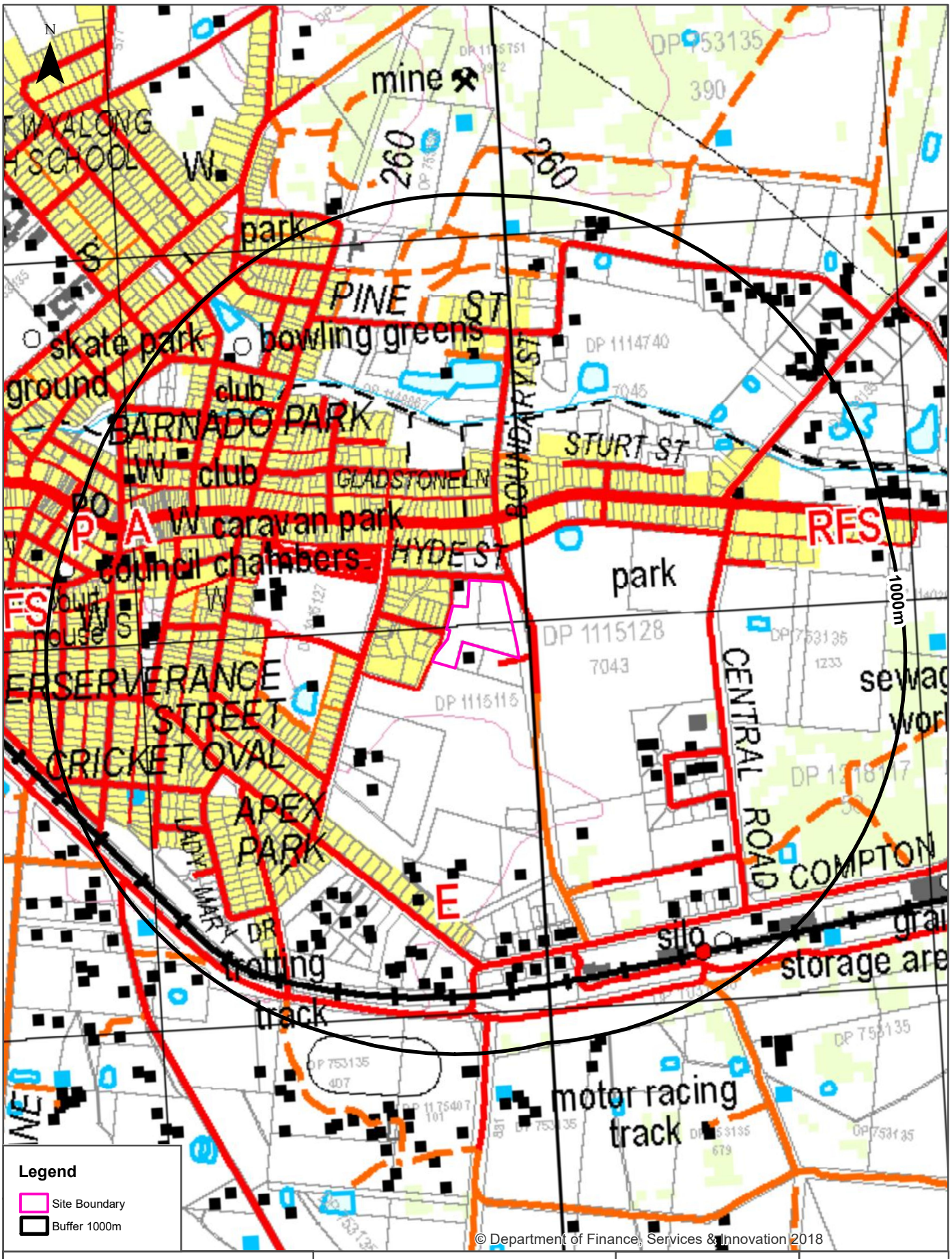
Hyde Street, West Wyalong, NSW 2671

Aerial Imagery 1958

Hyde Street, West Wyalong, NSW 2671

Topographic Map 2015

Hyde Street, West Wyalong, NSW 2671



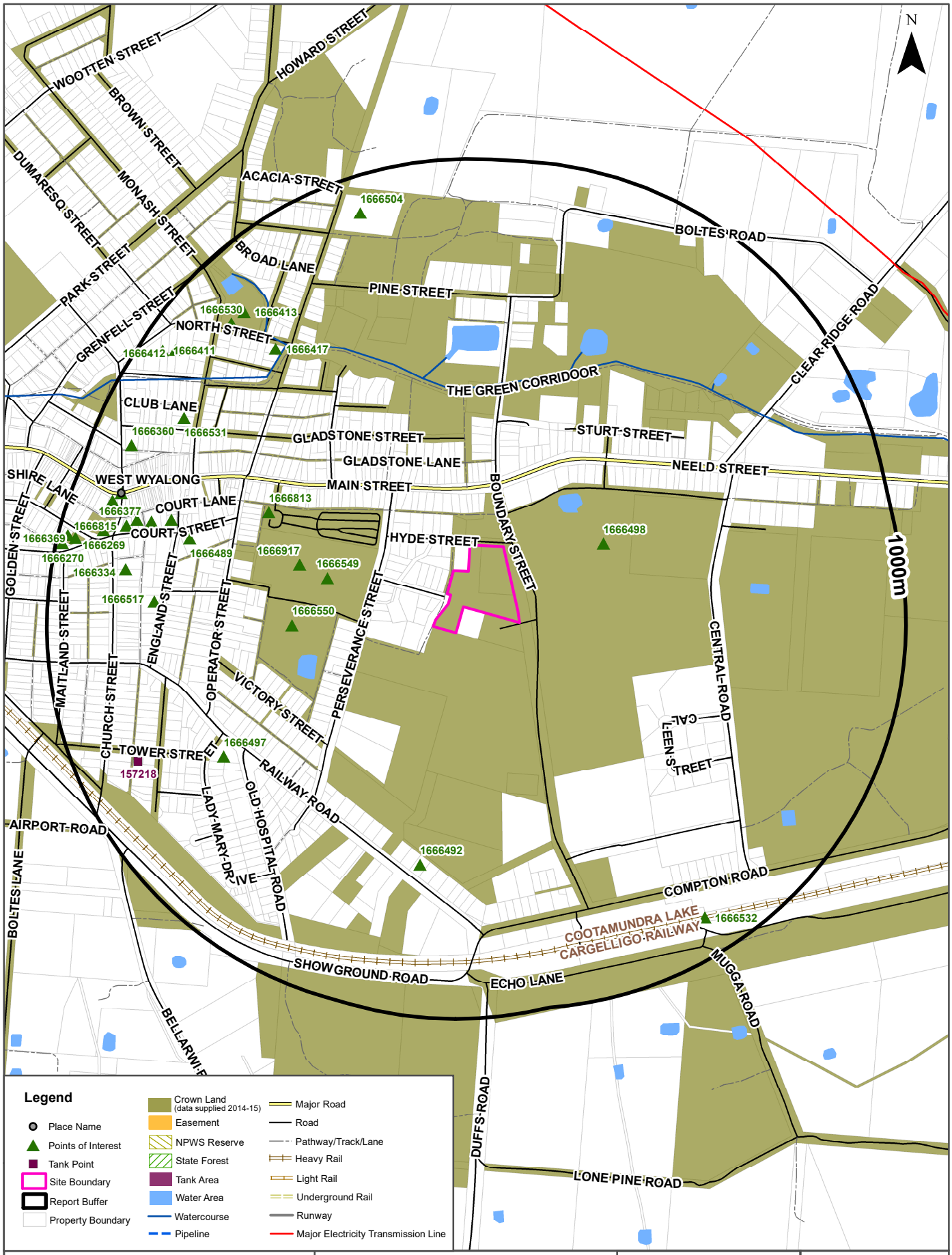
Scale: 0 100 200 400 600 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 21 December 2020

Historical Map 1978

Hyde Street, West Wyalong, NSW 2671

Topographic Features

Hyde Street, West Wyalong, NSW 2671



Topographic Features

Hyde Street, West Wyalong, NSW 2671

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
1666498	Park	Park	254m	East
1666549	Sports Field	PRESEVERANCE STREET SOCCER AND RUGBY OVAL	300m	West
1666550	Park	PERSERVERANCE STREET CRICKET OVAL	365m	West
1666917	Sports Field	RON CROWE OVAL RESERVE	380m	West
1666813	Tourist Park / Home Village	WEST WYALONG CARAVAN PARK	501m	West
1666492	SES Facility	WEST WYALONG SES	607m	South
1666497	Park	APEX PARK	638m	South West
1666489	Place Of Worship	ANGLICAN CHURCH	670m	West
1666417	Retirement Village	W T WILSON HOMES	715m	North West
1666517	Primary School	ST MARY'S WAR MEMORIAL SCHOOL	724m	West
1666535	Retirement Village	PRESBYTERIAN INDEPENDENT LIVING	731m	West
1666512	Place Of Worship	PRESBYTERIAN CHURCH	777m	West
1666531	Club	WEST WYALONG SERVICES AND CITIZENS CLUB	801m	North West
1666334	Place Of Worship	CATHOLIC CHURCH	809m	West
1666534	Retirement Village	PRESBYTERIAN INDEPENDENT LIVING	814m	West
1666815	Ambulance Station	WEST WYALONG AMBULANCE STATION	835m	West
1666413	Sports Court	BOWLING GREENS	840m	North West
1666530	Club	WEST WYALONG BOWLING AND REC CLUB	842m	North West
1666353	Town	WEST WYALONG	877m	West
1666377	Police Station	WEST WYALONG POLICE STATION	877m	West
1666269	Court House	WEST WYALONG COURT HOUSE	888m	West
1666345	Post Office	WEST WYALONG POST OFFICE	891m	West
1666360	Place Of Worship	UNITING CHURCH	894m	West
1666532	Railway Station	WYALONG RAILWAY STATION	901m	South East
1666504	Target Range	WEST WYALONG SMALL BORE RIFLE RANGE	906m	North
1666412	Swimming Pool Facility	HOLLAND PARK SWIM CENTRE	914m	North West
1666411	Park	HOLLAND PARK	941m	North West
1666369	Library	WEST WYALONG LIBRARY	953m	West
1666333	Local Government Chambers	BLAND SHIRE COUNCIL	974m	West
1666270	Fire Station	WEST WYALONG FIRE STATION	983m	West

Topographic Data Source: © Land and Property Information (2015)
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Topographic Features

Hyde Street, West Wyalong, NSW 2671

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
	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
157218	Water	Operational		01/01/1978	839m	South West

Tanks Data Source: © Land and Property Information (2015)
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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
N/A	No records in buffer				

Easements Data Source: © Land and Property Information (2015)
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Topographic Features

Hyde Street, West Wyalong, NSW 2671

State Forest

What State Forest exist within the dataset buffer?

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

State Forest Data Source: © NSW Department of Finance, Services & Innovation (2018)
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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				

NPWS Data Source: © NSW Department of Finance, Services & Innovation (2018)
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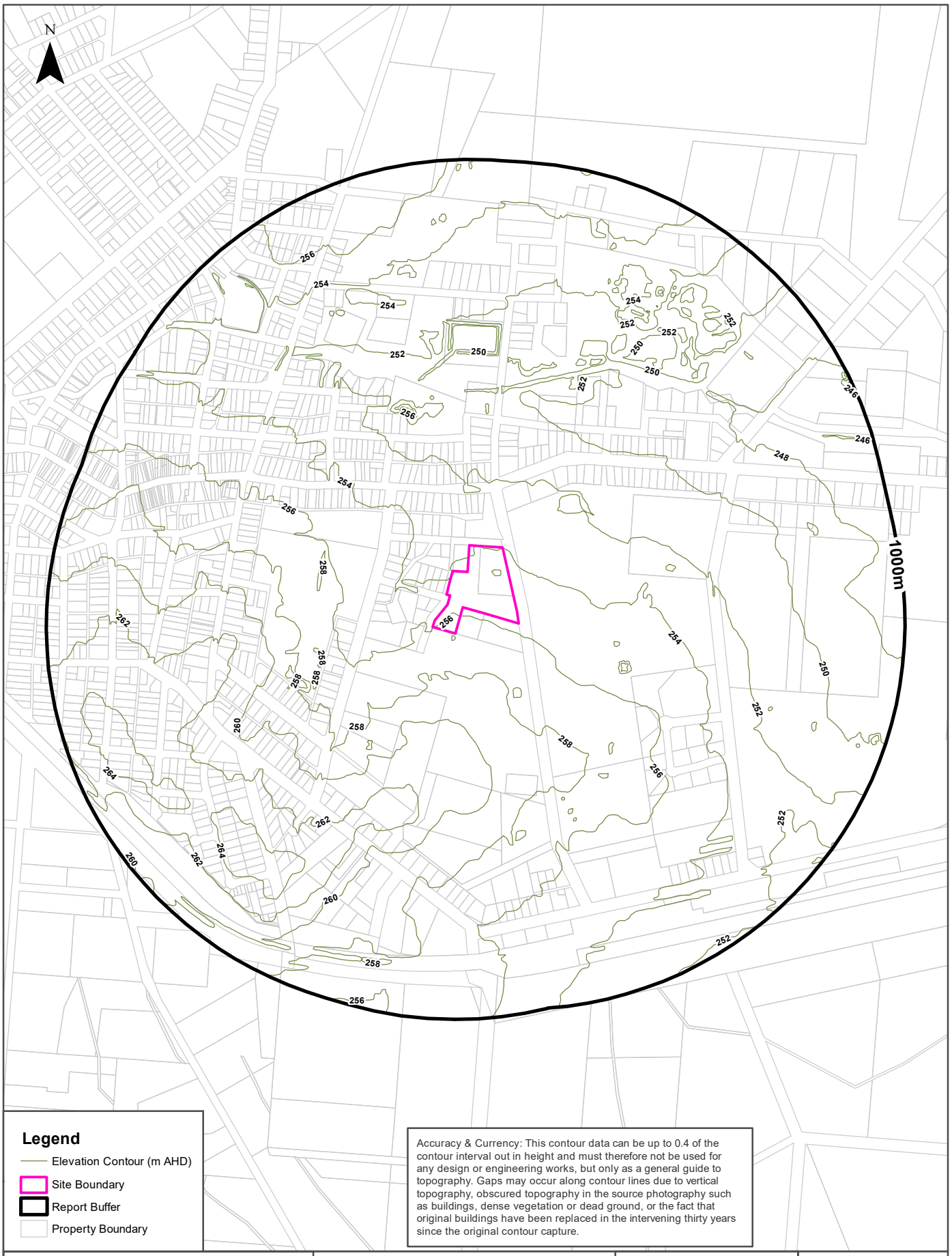
Elevation Contours (m AHD)

Hyde Street, West Wyalong, NSW 2671



Hydrogeology & Groundwater

Hyde Street, West Wyalong, NSW 2671

Hydrogeology

Description of aquifers on-site:

Description
Fractured or fissured, extensive aquifers of low to moderate productivity

Description of aquifers within the dataset buffer:

Description
Fractured or fissured, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
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Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

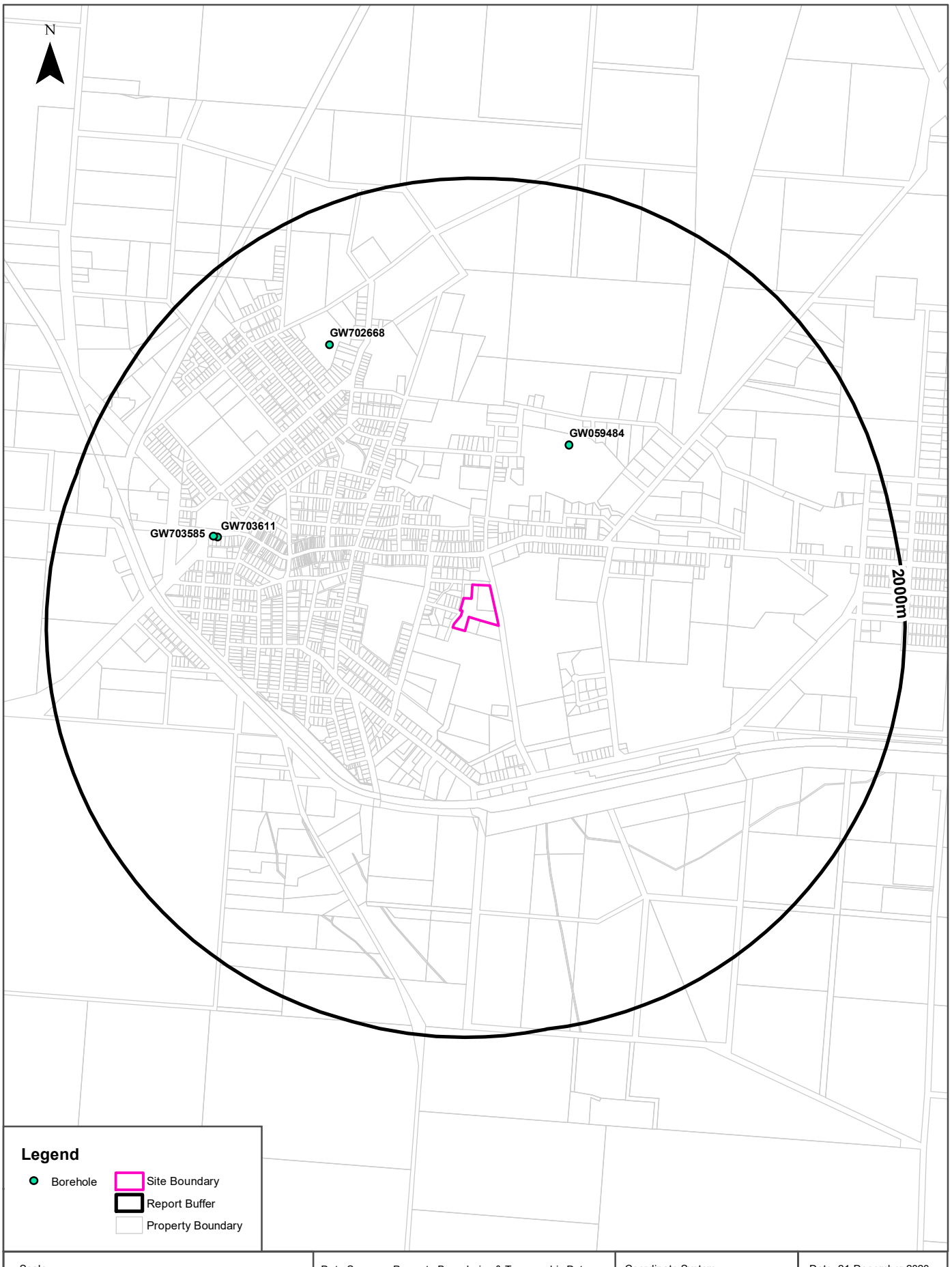
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

Hyde Street, West Wyalong, NSW 2671



Hydrogeology & Groundwater

Hyde Street, West Wyalong, NSW 2671

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW059484	70BL130076	Bore open thru rock	Private	Industrial	Industrial		01/03/1984	74.00	74.00					794m	North East
GW703611	70BL232606	Bore	Private	Monitoring Bore	Monitoring Bore		29/09/2008	4.40	4.40		4.35			1238m	West
GW703585	70BL232604	Bore	Private	Monitoring Bore	Monitoring Bore		29/09/2008	4.40	4.40		4.35			1259m	West
GW702668	70BL228972	Bore	Private	Domestic	Domestic		31/12/2003	0.00						1371m	North West

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Hydrogeology & Groundwater

Hyde Street, West Wyalong, NSW 2671

Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW059484	0.00m-43.00m Sand Granitic 43.00m-54.00m Granite Weathered 54.00m-74.00m Granite 74.00m-74.01m Water Bearing	794m	North East
GW703611	0.00m-0.80m clayey sand brown 0.80m-3.20m silty clay brown yellow brown 3.20m-4.40m gravelly clay brown	1238m	West
GW703585	0.00m-0.80m clayey sand dark brown 0.80m-2.80m sandy clay brown 2.80m-4.40m gravelly clay yellow brown grey mottles	1259m	West

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
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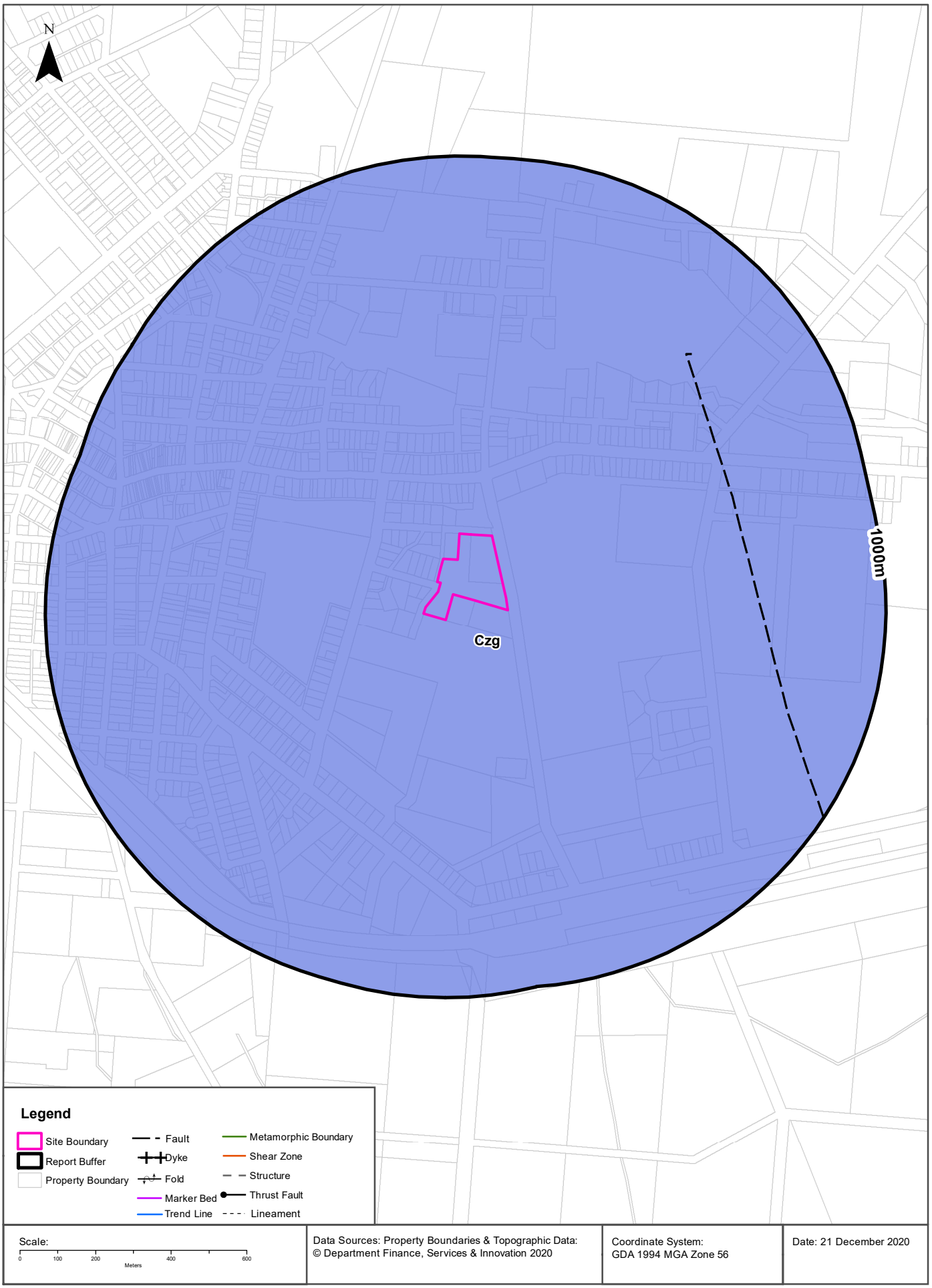
Geology 1:250,000

Hyde Street, West Wyalong, NSW 2671



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Geology

Hyde Street, West Wyalong, NSW 2671

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Czg	Predominantly highly weathered granite with scattered ferruginous lag derived from mottled saprolite; colluvial sediments on plains and rises				Cainozoic			1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Czg	Predominantly highly weathered granite with scattered ferruginous lag derived from mottled saprolite; colluvial sediments on plains and rises				Cainozoic			1:250,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
Fault		Fault, Inferred	Forbes	1:250,000

Geological Data Source : NSW Department of Industry, Resources & Energy

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Naturally Occurring Asbestos Potential

Hyde Street, West Wyalong, NSW 2671

Naturally Occurring Asbestos Potential

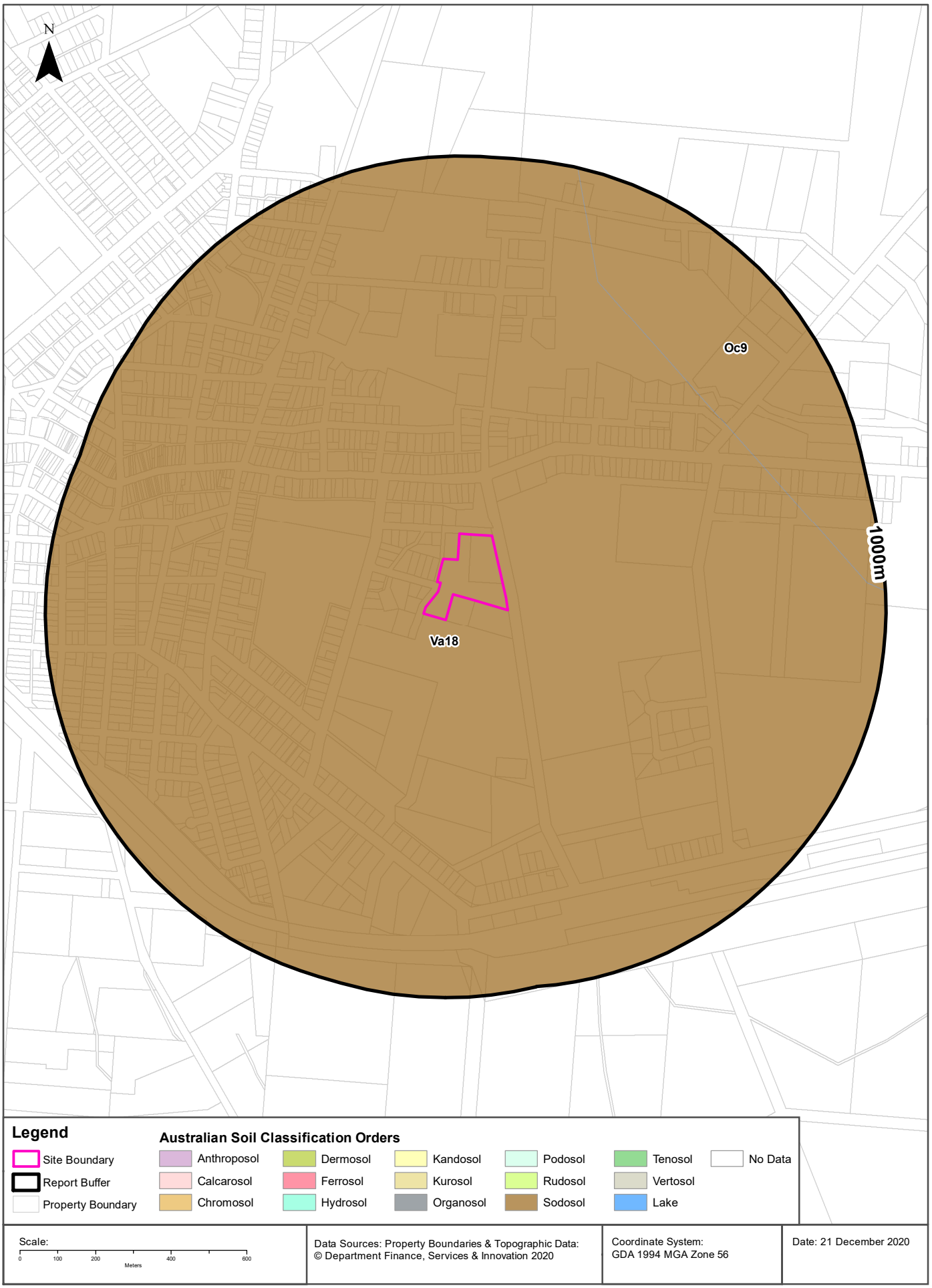
Naturally Occurring Asbestos Potential within the dataset buffer:

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

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Atlas of Australian Soils

Hyde Street, West Wyalong, NSW 2671



Soils

Hyde Street, West Wyalong, NSW 2671

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
Va18	Sodosol	Gently undulating, some gravelly surfaces: chief soils seem to be hard alkaline yellow mottled soils (Dy3.43) beneath which mottled and pallid clayey materials occur. As mapped, soils of unit Ob8 may be included.	0m
Oc9	Sodosol	Plains: chief soils are hard alkaline red soils (Dr2.33). Associated are: various (D) soils including (Db1.33), (Dy2.43), (Dy3.43), and (Dd1.33) probably in some discontinuous slope sequence; grey and brown cracking clays (Ug5.2 and Ug5.3) in local gilgai areas; and minor areas of (Gn2) soils The (D) soils usually have thin A horizons (< 6 in.) and especially so on the open plain. As mapped areas of unit CC14 are included.	656m

Atlas of Australian Soils Data Source: CSIRO
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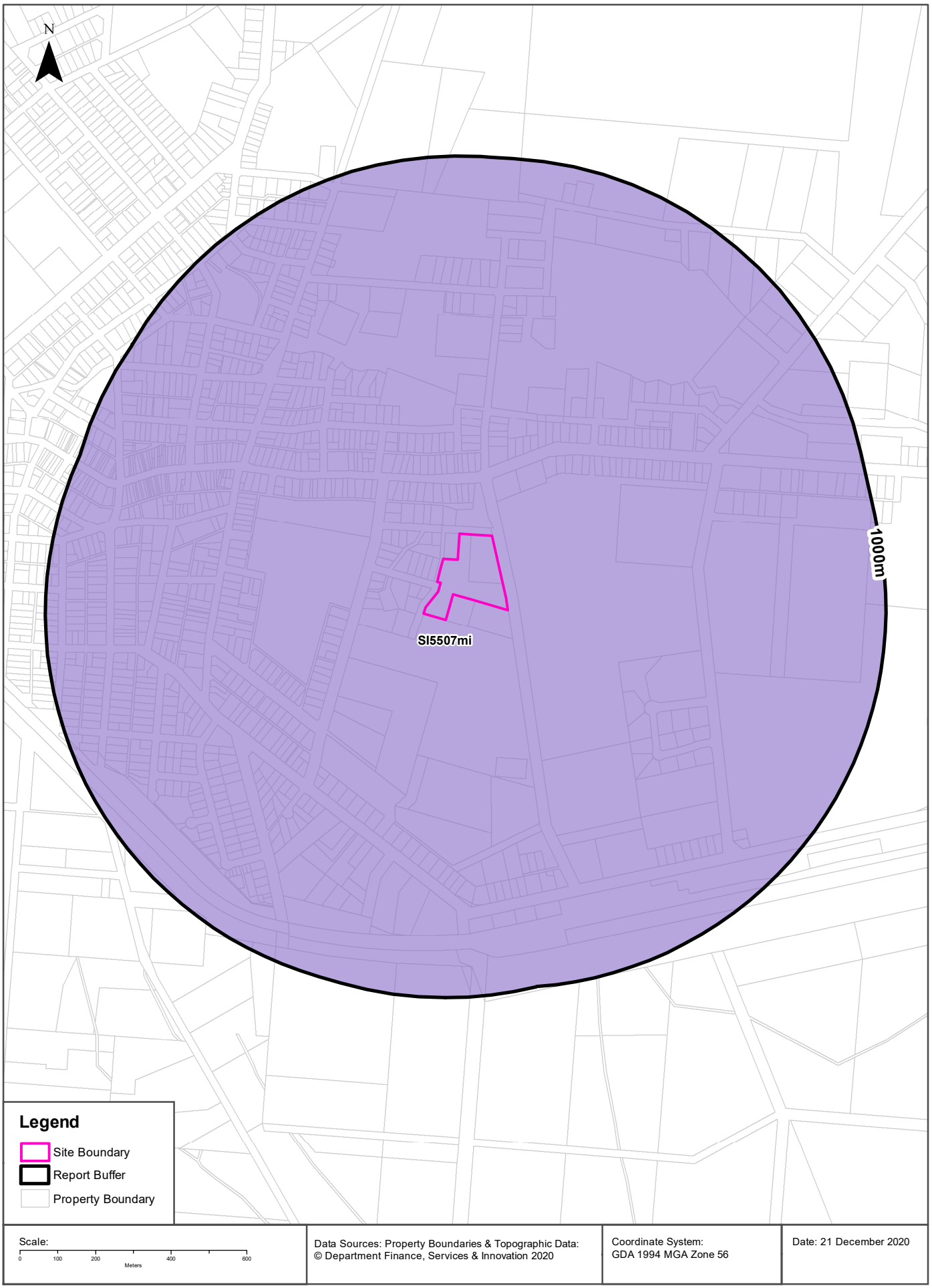
Soil Landscapes of Central and Eastern NSW

Hyde Street, West Wyalong, NSW 2671



Soils

Hyde Street, West Wyalong, NSW 2671

Soil Landscapes of Central and Eastern NSW

What are the on-site Soil Landscapes?

Soil Code	Name
SI5507mi	Mildil

What are the Soil Landscapes within the dataset buffer?

Soil Code	Name
SI5507mi	Mildil

Soil Landscapes of Central and Eastern NSW: NSW Department of Planning, Industry and Environment
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Acid Sulfate Soils

Hyde Street, West Wyalong, NSW 2671

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				

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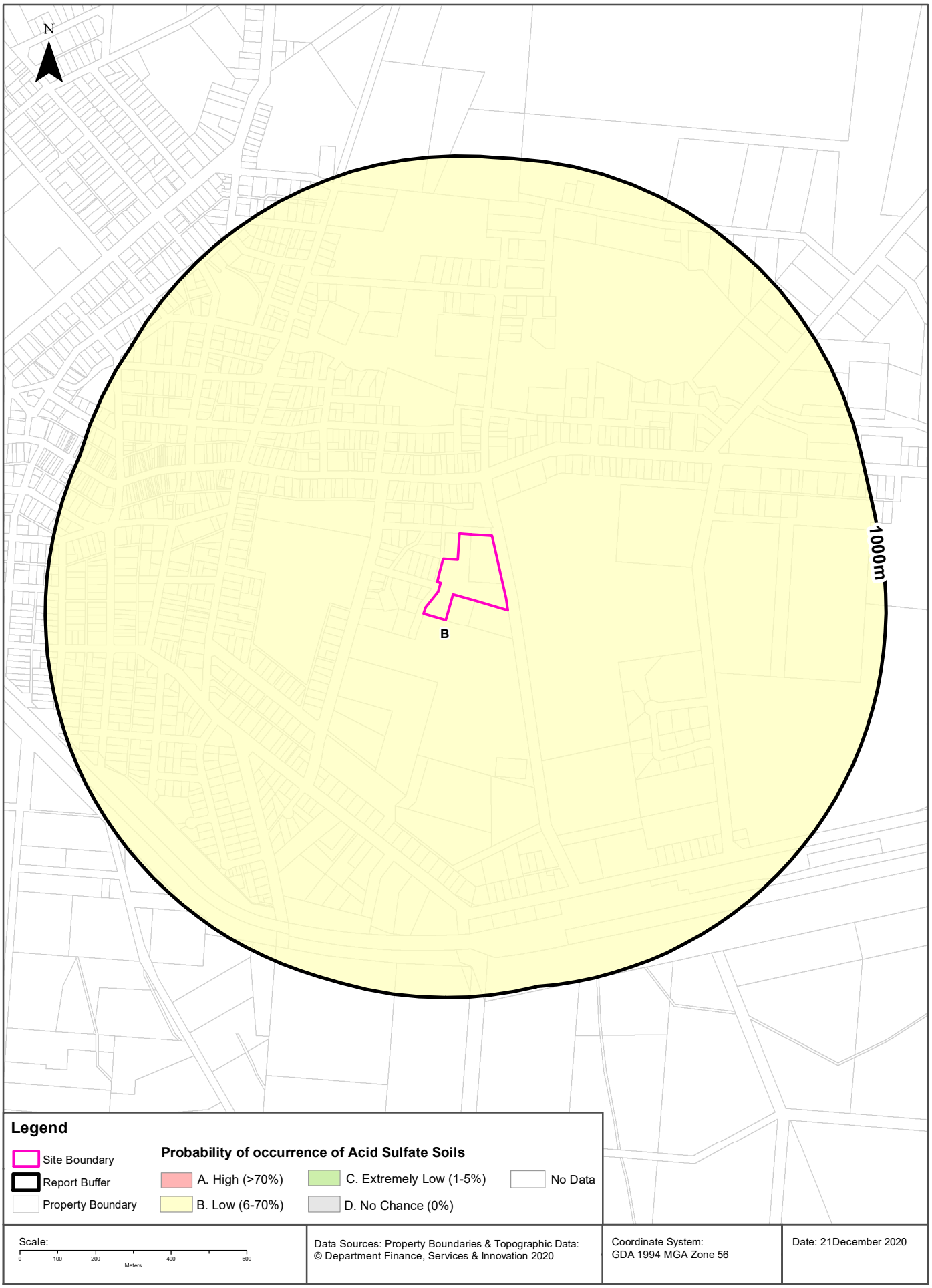
Atlas of Australian Acid Sulfate Soils

Hyde Street, West Wyalong, NSW 2671



Acid Sulfate Soils

Hyde Street, West Wyalong, NSW 2671

Atlas of Australian Acid Sulfate Soils

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

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

Atlas of Australian Acid Sulfate Soils Data Source: CSIRO
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Dryland Salinity

Hyde Street, West Wyalong, NSW 2671

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

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

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

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage
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Mining

Hyde Street, West Wyalong, NSW 2671

Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining Subsidence District Data Source: © Land and Property Information (2016)
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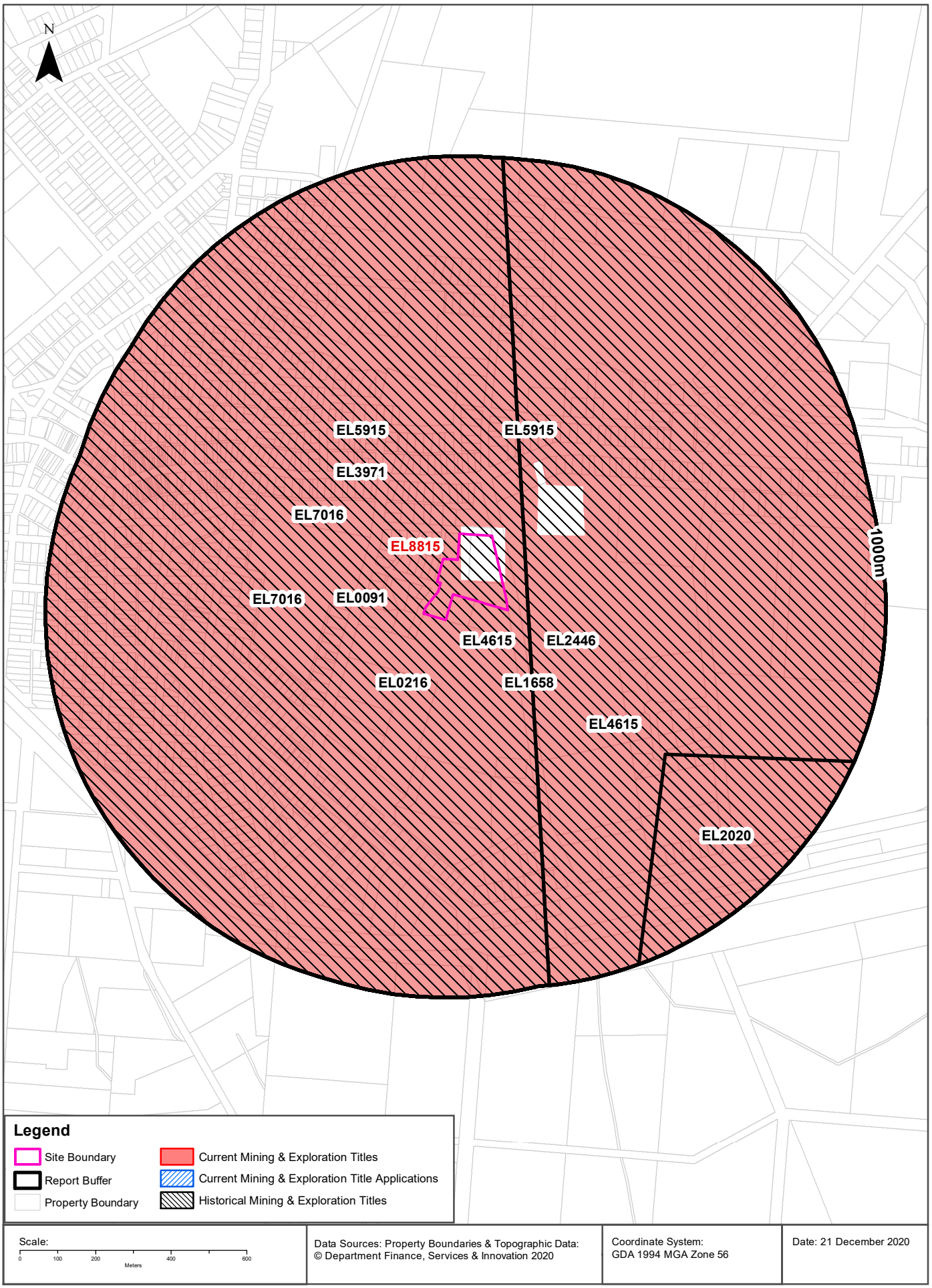
Mining & Exploration Titles

Hyde Street, West Wyalong, NSW 2671



Mining

Hyde Street, West Wyalong, NSW 2671

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 (m)	Dir'
EL8815	WEDDARLA PTY LTD	14/01/19	14/01/22	14 Jan 2019	EXPLORING	MINERALS	Group 1	0m	Onsite

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 (m)	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

Hyde Street, West Wyalong, NSW 2671

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist (m)	Dir'
EL0091	EASTERN PROSPECTING & DEVELOPMENT	01 Feb 1967	01 Feb 1968	MINERALS	Au	0m	Onsite
EL0216	BYRNES, F C	01 Oct 1969	01 Apr 1971	MINERALS	Au	0m	Onsite
EL1658	WRIGHT, M E	01 Jan 1979	01 Dec 1984	MINERALS	Au	0m	Onsite
EL2446	LACHLAN RESOURCES NL	01 Jun 1985	01 Apr 1988	MINERALS	Au	0m	Onsite
EL3971	ST JOE AUSTRALIA PTY LTD	01 Nov 1991	01 Nov 1993	MINERALS	Au	0m	Onsite
EL4615	LAC MINERALS (AUSTRALIA) NL			MINERALS		0m	Onsite
EL4615	LAC MINERALS (AUSTRALIA) NL	08 Nov 1993	07 Nov 1995	MINERALS	Au Cu	0m	Onsite
EL5915	GOLDEN CROSS OPERATIONS PTY. LTD.			MINERALS		0m	Onsite
EL5915	GOLDEN CROSS OPERATIONS PTY. LTD.	10 Jan 2002	09 Jan 2004	MINERALS		0m	Onsite
EL7016	NSW TIN PTY LIMITED			MINERALS		0m	Onsite
EL7016	NSW TIN PTY LIMITED	20 Jan 2008	11 Oct 2012	MINERALS	Ag Cu Pb Zn W Sn	0m	Onsite
EL2020	MINERAL MANAGEMENT & SECURITIES PTY LIMITED	01 Sep 1982	01 Jan 1985	MINERALS	Au Ag	565m	South East

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

State Environmental Planning Policy

Hyde Street, West Wyalong, NSW 2671

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							

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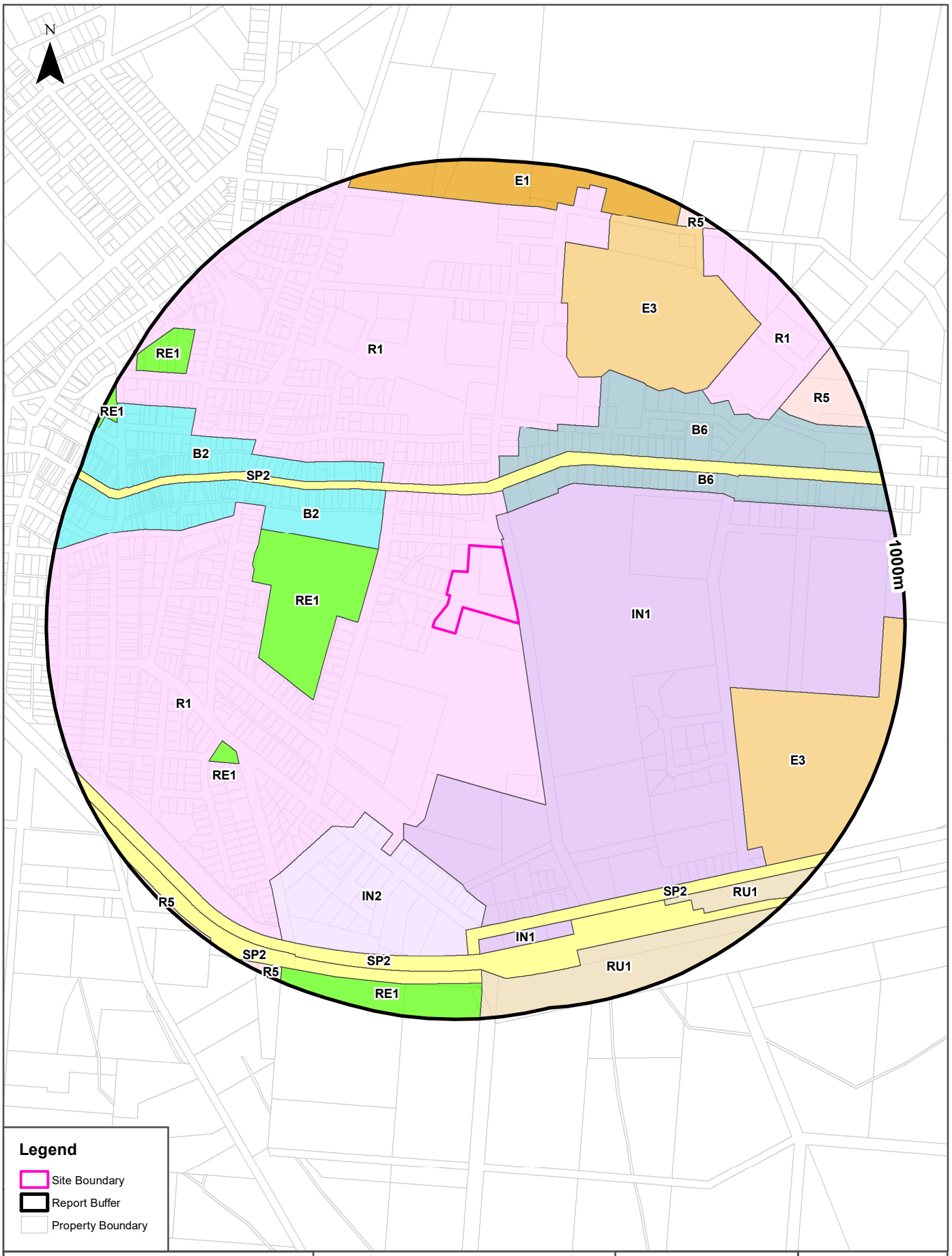
EPI Planning Zones

Hyde Street, West Wyalong, NSW 2671



Data Sources: Property Boundaries & Topographic Data: © Department Finance, Services & Innovation 2020 Planning: NSW Crown Copyright - Planning & Environment

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Environmental Planning Instrument

Hyde Street, West Wyalong, NSW 2671

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		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		0m	Onsite
IN1	General Industrial		Bland Local Environmental Plan 2011	17/08/2018	17/08/2018	17/08/2018	Amendment No 1	0m	South East
B6	Enterprise Corridor		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		92m	East
SP2	Infrastructure	Classified Road	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		133m	North
R1	General Residential		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		161m	North West
B6	Enterprise Corridor		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		181m	North East
RE1	Public Recreation		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		190m	West
B2	Local Centre		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		202m	West
B2	Local Centre		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		281m	North West
E3	Environmental Management		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		482m	North East
IN2	Light Industrial		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		511m	South
E3	Environmental Management		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		570m	South East
RE1	Public Recreation		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		603m	South West
R1	General Residential		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		656m	North East
SP2	Infrastructure	Classified Road	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		748m	South East
SP2	Infrastructure	Rail Infrastructure	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		778m	South West
IN1	General Industrial		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		779m	South
R5	Large Lot Residential		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		801m	North East
RU1	Primary Production		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		808m	East
RE1	Public Recreation		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		858m	North West
RU1	Primary Production		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		859m	South
SP2	Infrastructure	Classified Road	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		873m	South West
E1	National Parks and Nature Reserves		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		886m	North
RE1	Public Recreation		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		906m	South
R5	Large Lot Residential		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		946m	North East
RE1	Public Recreation		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		952m	North West
R5	Large Lot Residential		Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018		964m	South

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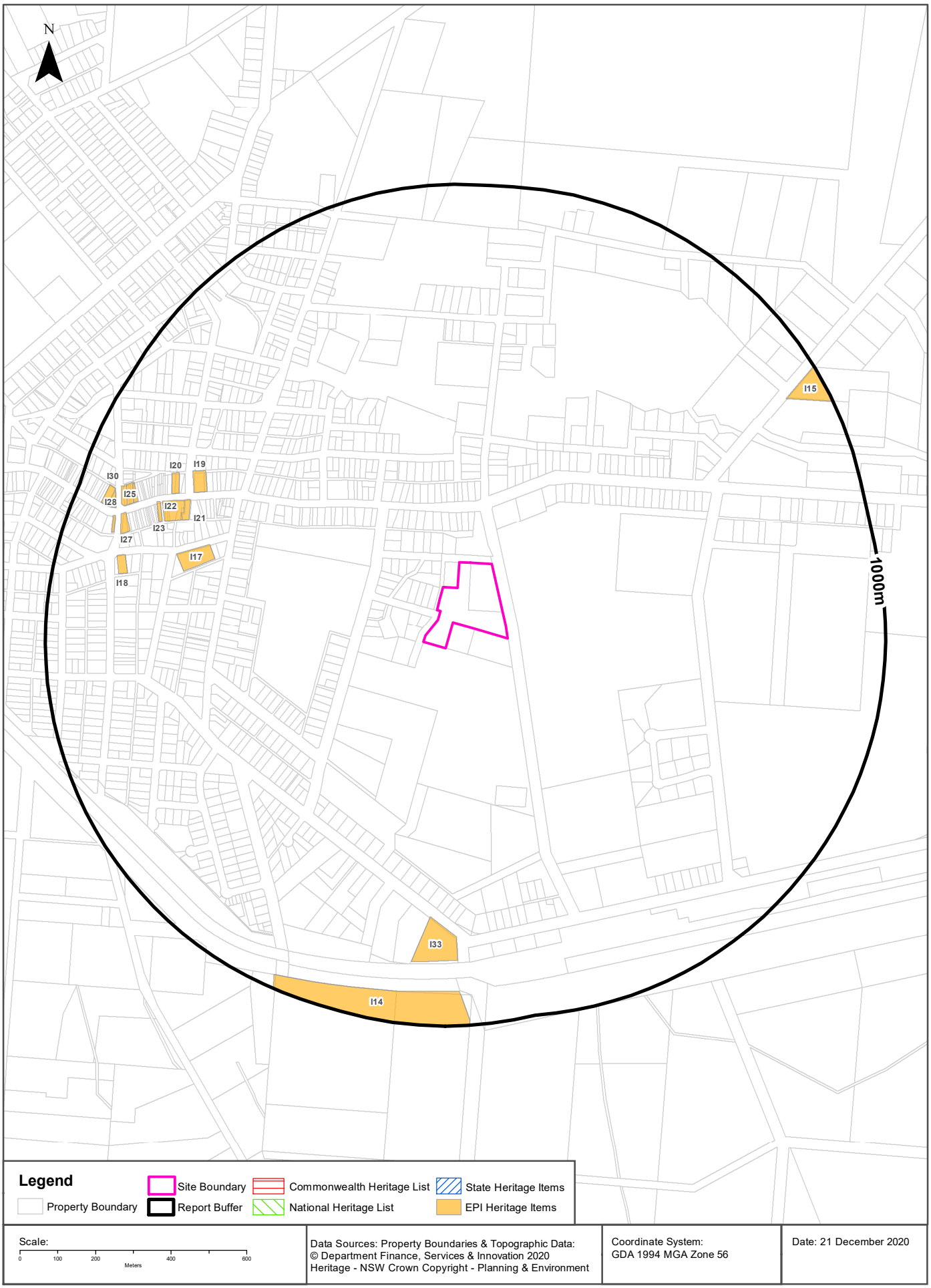
Heritage Items

Hyde Street, West Wyalong, NSW 2671



Heritage

Hyde Street, West Wyalong, NSW 2671

Commonwealth Heritage List

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

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

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

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

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

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage
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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
I17	St Barnabas Anglican Church	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	594m	West
I19	Tattersall's Hotel	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	675m	North West
I21	Post Office Hotel	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	697m	West

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I33	Flour Mill (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	711m	South
I22	Building, John Meagher & Co (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	715m	West
I20	Shops	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	742m	North West
I23	Building, Rural Chambers (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	761m	West
I18	Residence, "Myrtle Court"	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	804m	West
I27	Bank of New South Wales (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	830m	West
I24	Medical Hall (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	839m	West
I25	Souden's Homestead Store	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	849m	West
I26	CBC Bank (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	863m	West
I29	John Souden Jeweller (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	869m	West
I28	Thom's Corner	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	888m	West
I15	Herridge's Brick Kilns (former)	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	892m	North East
I30	Globe Hotel	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	906m	West
I14	West Wyalong Showground Pavilions	Item - General	Local	Bland Local Environmental Plan 2011	09/12/2011	09/12/2011	17/08/2018	907m	South

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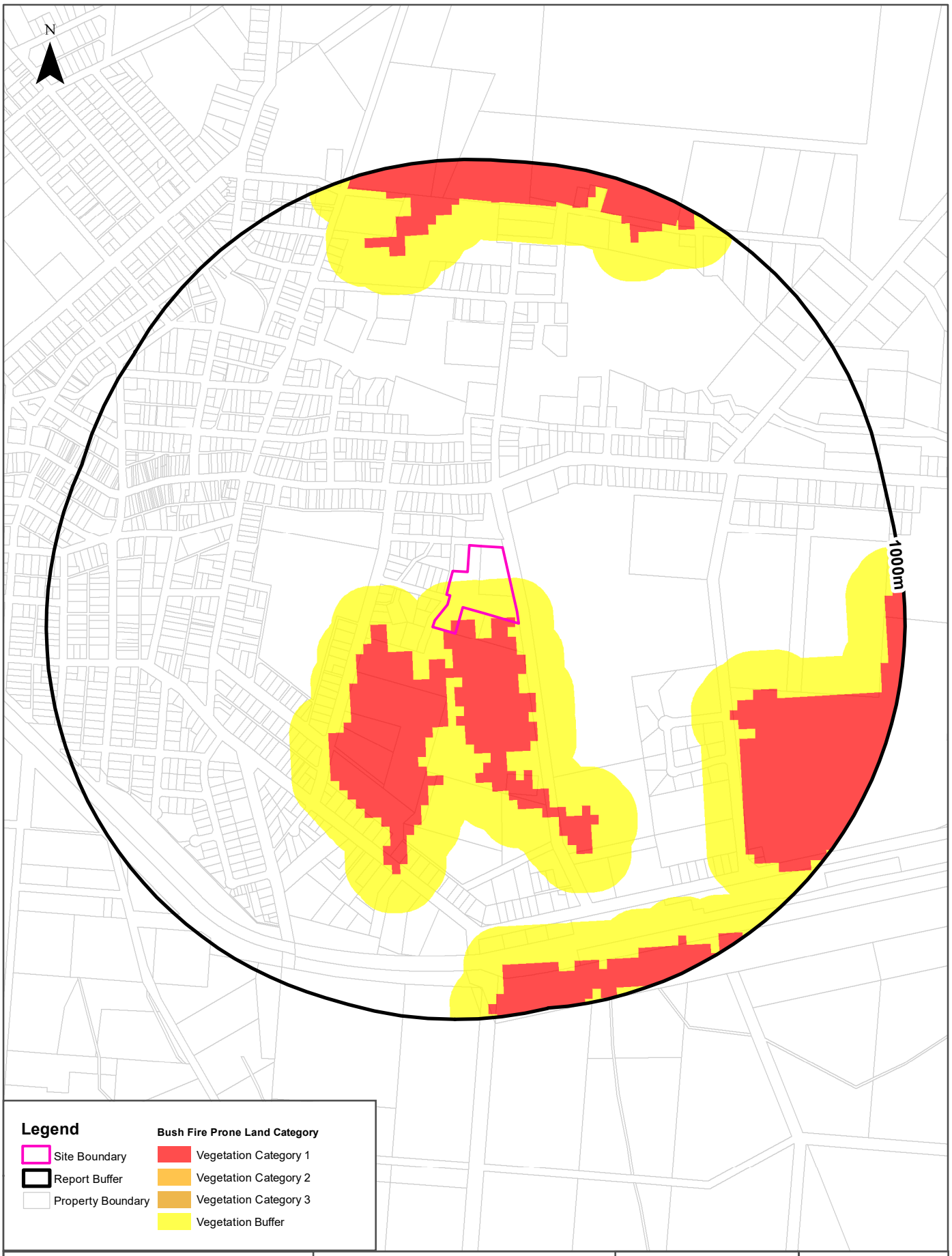
Natural Hazards - Bush Fire Prone Land

Hyde Street, West Wyalong, NSW 2671



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2020. Property Boundaries: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 21 December 2020

Natural Hazards

Hyde Street, West Wyalong, NSW 2671

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	0m	Onsite
Vegetation Category 1	0m	Onsite

NSW Bush Fire Prone Land - © NSW Rural Fire Service under Creative Commons 4.0 International Licence

Ecological Constraints

Hyde Street, West Wyalong, NSW 2671

Ramsar Wetlands

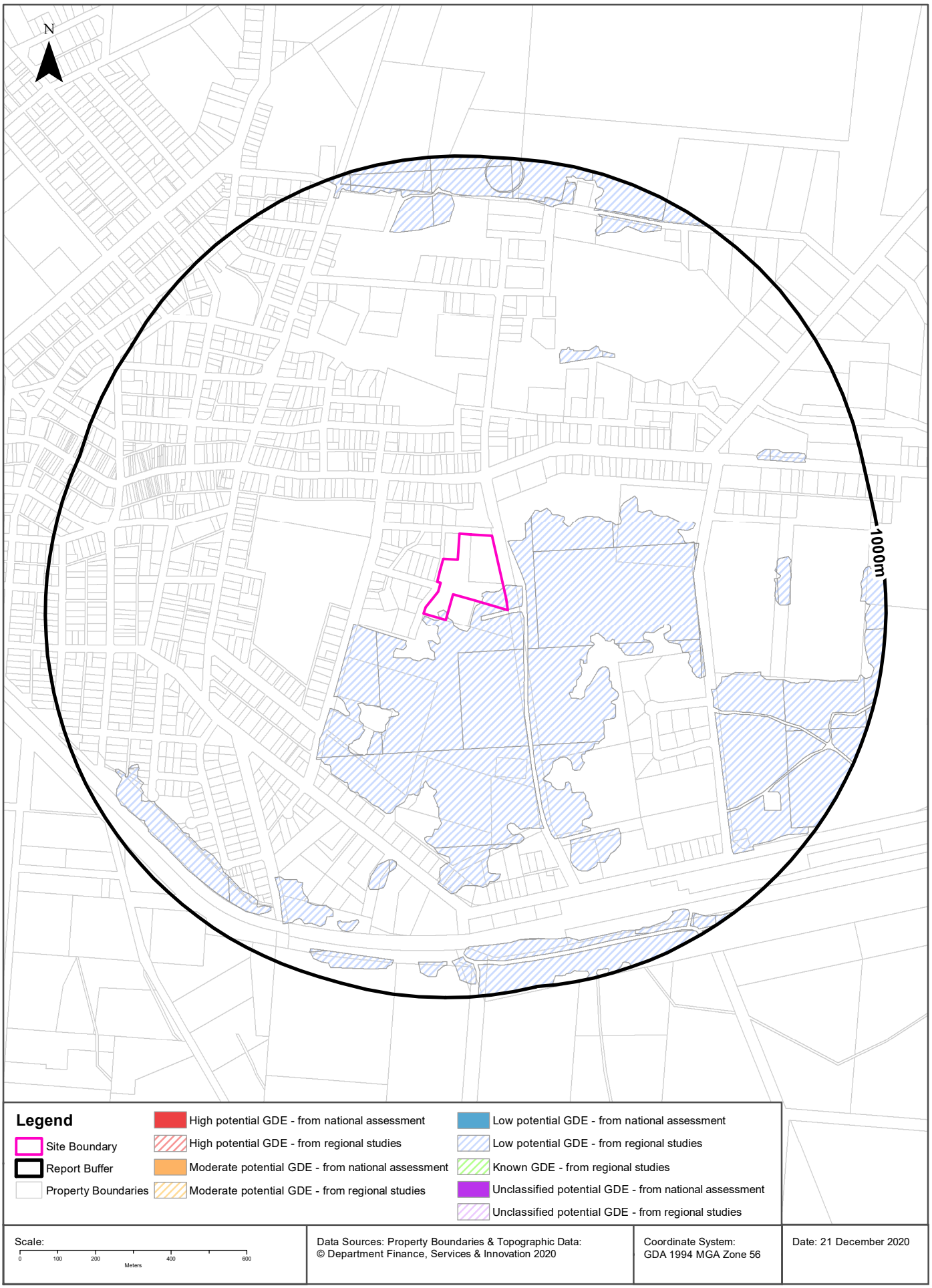
What Ramsar Wetland areas exist within the dataset buffer?

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 Environment

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Hyde Street, West Wyalong, NSW 2671



Ecological Constraints

Hyde Street, West Wyalong, NSW 2671

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	Low potential GDE - from regional studies	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		0m

Groundwater Dependent Ecosystems Atlas Data Source: The Bureau of Meteorology
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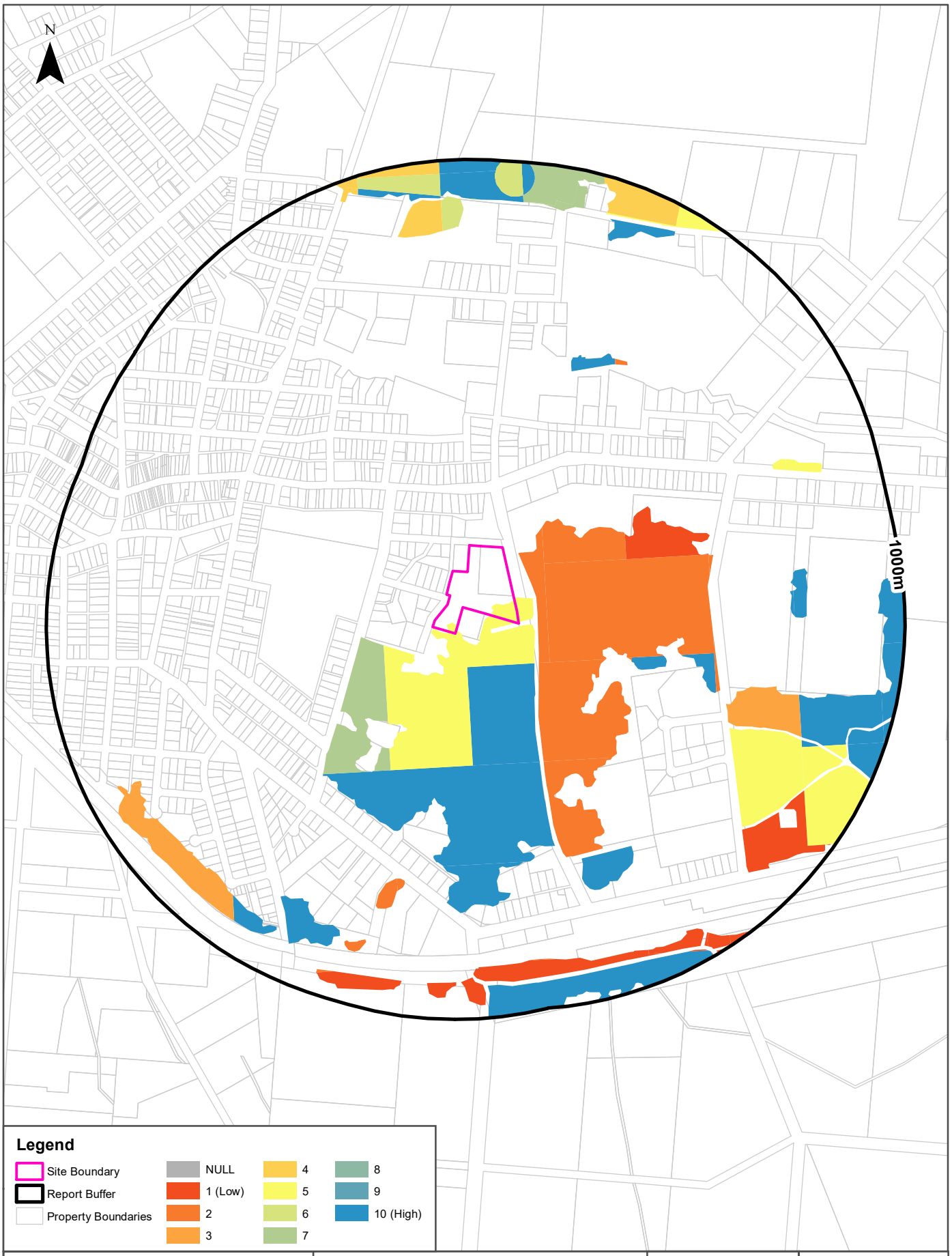
Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Hyde Street, West Wyalong, NSW 2671



Ecological Constraints

Hyde Street, West Wyalong, NSW 2671

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
Terrestrial	5	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		0m
Terrestrial	2	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		35m
Terrestrial	10	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		91m
Terrestrial	7	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		134m
Terrestrial	1	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		304m
Terrestrial	3	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		575m
Terrestrial	4	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		810m
Terrestrial	6	Ridges and minor tablelands stepping down westwards and breaking into detached hills with intervening alluvial valley floors. Some strong structural control on landforms.	Vegetation		817m

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology
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Ecological Constraints

Hyde Street, West Wyalong, NSW 2671

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	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; 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	Chthonicola sagittata	Speckled Warbler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Cinclosoma castanotum	Chestnut Quail-thrush	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	Drymodes brunneopygia	Southern Scrub-robin	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Glossopsitta pusilla	Little Lorikeet	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Grantiella picta	Painted Honeyeater	Vulnerable	Not Sensitive	Vulnerable	
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	Hylacola cautus	Shy Heathwren	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lathamus discolor	Swift Parrot	Endangered	Category 3	Critically Endangered	
Animalia	Aves	Leipoa ocellata	Malleefowl	Endangered	Not Sensitive	Vulnerable	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Neophema pulchella	Turquoise Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Ninox connivens	Barking Owl	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pachycephala inornata	Gilbert's Whistler	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Petroica phoenicea	Flame Robin	Vulnerable	Not Sensitive	Not Listed	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Pezoporus wallicus wallicus	Eastern Ground Parrot	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Polytelis swainsonii	Superb Parrot	Vulnerable	Category 3	Vulnerable	
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	Mammalia	Pteropus poliocephalus	Grey-headed Flying-fox	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Austrostipa wakoolica	A spear-grass	Endangered	Not Sensitive	Endangered	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Lepidium aschersonii	Spiny Peppercress	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Philotheca angustifolia subsp. angustifolia		Presumed Extinct	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.
NSW BioNet: © State of NSW and Office of Environment and Heritage

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
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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Appendix B

Section 10.7 planning certificate

BLAND SHIRE COUNCIL
west wyalong

PO Box 21
WEST WYALONG NSW 2671

Telephone: 02 6972 2266
Facsimile: 02 6972 2145
Email: council@blandshire.nsw.gov.au
Website: www.blandshire.nsw.gov.au

PLANNING CERTIFICATE

Issued under Section 10.7(2) and (5)
Environmental Planning and Assessment Act 1979

EMM Consulting Pty Limited
Ground Floor, Suite 1
20 Chandos Street
ST. LEONARDS NSW 2065

Certificate Number: **PL2021/0178**
Your Reference:
Date of Issue: 22/01/2021

Property Number	138640
Assessment Number:	**07010-00000000**
Property Address:	Boundary Street WEST WYALONG NSW 2671
Legal Description:	Lot 7044 DP 1115128 Lot 2 DP 1239669
Owner	West Wyalong Local Aboriginal Land Council

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

Names of relevant planning instruments and DCPs

Local Environmental Plans
Bland Local Environmental Plan 2011

Regional Environmental Plan
Nil

State Environmental Planning Policies
SEPP No.1 – Development Standards SEPP No. 4 – Development without Consent & Miscellaneous Exempt and Complying Development SEPP No. 6 – Number of Storey's in a Building SEPP No. 21 – Caravan Parks SEPP No. 22 – Shops and Commercial Premises SEPP No. 30 – Intensive Agriculture SEPP No. 33 – Hazardous and Offensive Development SEPP No. 36 – Manufactured Home Estates SEPP No. 50 – Canal Estate Development SEPP No. 55 – Remediation of Land SEPP No. 62 – Sustainable Aquaculture

SEPP No. 64 – Advertising and Signage
SEPP No. 65 – Design Quality of Residential Flat Development
SEPP (Housing for Seniors or People with a Disability) 2004
SEPP (Building Sustainability Index: BASIX) 2004
SEPP (Major Developments) 2005
SEPP (Mining, Petroleum Production and Extractive Industries) 2007
SEPP (Temporary Structures and Places of Public Entertainment) 2007
SEPP (Infrastructure) 2007
SEPP (Rural Lands) 2008
SEPP (Exempt and Complying Development Codes) 2008

Draft Planning Instruments
Nil

Development Control Plans
Bland Development Control Plan 2012

Zoning and land use under relevant LEPs

Zoning	
Lot 7044 DP 1115128	R1 General Residential

1. Objectives of zone
- To provide for the housing needs of the community.
- To provide for a variety of housing types and densities.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To promote seniors housing on land in the vicinity of the West Wyalong District Hospital.

2. Permitted without consent
Environmental protection works; Home-based child care; Home occupations; Roads

3. Permitted with consent
Attached dwellings; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Food and drink premises; Group homes; Home industries; Hostels; Kiosks; Multi dwelling housing; Neighbourhood shops; Places of public worship; Residential flat buildings; Respite day care centres; Semi-detached dwellings; Seniors housing; Shop top housing; Any other development not specified in item 2 or 4

4. Prohibited
Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Biosolids treatment facilities; Boat building and repair facilities; Car parks; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Extractive industries; Farm buildings; Farm stay accommodation; Forestry; Freight transport facilities; Heavy industrial storage establishments; Helipads; Highway service centres; Industrial retail outlets; Industrial training facilities; Industries; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Public administration buildings; Recreation facilities (major); Research stations; Restricted premises; Rural industries; Rural workers' dwellings; Service stations; Sewage treatment plants; Sex services premises; Signage; Storage premises; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Waste or resource management facilities; Wharf or boating facilities; Wholesale supplies

Minimum land dimensions for the erection of a dwelling house	
Lot 7044 DP 1115128	Not applicable
Lot 2 DP 1239669	Not applicable

Does the land include or comprise critical habitat?
No
Is the land located in a conservation area?
No

Is there an item of environmental heritage situated on the land?	
Lot 7044 DP 1115128	No
Lot 2 DP 1239669	No

Complying Development

Is complying development permitted to be carried out on the subject land?
Yes

Coastal Protection

Is the land subject to annual charges under the Local Government Act 1993 for costal protection services that relate to existing coastal protection works?
No

Mine Subsidence

Is the land proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961?
No

Road Widening and Road Realignment

Is the land affected by road widening or road realignment?
No

Council and other public authority policies on hazard risk restrictions

Is the land affected by a Council or other public authority policy 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)?
No

Flood related development controls information

Is development on the land or part of the land for the purposes of a dwelling house, dual occupancies, multi dwelling housing or residential flat buildings (not including development for group homes or seniors housing) subject to flood related development controls?
No
Is development on the land or part of the land for any other purpose subject to flood related development controls?
No
Note: This does not mean that the land is not affected by inundation. Further investigation may be required.

Land reserved for acquisition

Does any environmental planning instrument or proposed planning instrument make provision in relation to the acquisition of the land by a public authority?
No

Contributions plans

Contribution Plans that apply to the land:

- Bland Shire Council Section 94A Development Contributions Plan
- Bland Shire Council Section 94 Traffic Generating Development Contributions Plan

Biodiversity certified land

Is the land biodiversity certified land (within the meaning of Part 7AA of the Threatened Species Conservation Act 1995)?
No

Biodiversity stewardship sites

Is the land a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*?
No

Native Vegetation Clearing Set Asides

Does the land contain a set aside area under section 60ZC of the Local Land Services Act 2013?
No

Bush fire prone land

Is the land identified as being bush fire prone land	
Lot 7044 DP 1115128	Part of the land is bush fire prone
Lot 2 DP 1239669	None of the land is bush fire prone

Property vegetation plans

Does a property vegetation plan apply to the land?	
Lot 7044 DP 1115128	No
Lot 2 DP 1239669	No

Orders under Trees (Disputes between Neighbours) Act 2006

Has an order been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work on the land in relation to a tree?
No

Directions under Part 3A

Is there a direction by the Minister in force under section 75P (2) (cl) of the Act?
No

Site compatibility certificates and conditions for seniors housing

Is there a current site compatibility certificate (seniors housing) of which the Council is aware in respect of proposed development on the land?
No
Note: Development consent has not been granted for Housing for Seniors or People with a Disability on the land.

Site compatibility certificates for infrastructure, schools or TAFE establishments

Is there are current site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments) of which the Council is aware in respect of proposed development on the land?
No

Site compatibility certificates and conditions for affordable rental housing

Is there a current site compatibility certificate (affordable rental housing) of which the Council is aware?
No
Note: Development consent has not been granted for Affordable Rental Housing on the land.

Paper subdivision

Has a development plan been adopted by a relevant authority that is applicable to the land?
No
Is the land proposed to be subject to a consent ballot?
No

Site verification certificates

Is there a current site verification certificate in respect of the land?
No

Loose-fill asbestos

Does the land include any residential premises that are listed on the register that is required to be maintained under Division 1A of Part 8 of the *Home Building Act 1989*?
No

Affected building notices and building product rectification orders?

Is there any affected building notice of which the Council is aware that is in force in respect of the land?
No

Is there any building product rectification order of which the Council is aware that is in force in respect of the land and has not been fully complied with?
No

Is there any notice of intention to make a building product rectification order of which the Council is aware that has been given in respect of land and is outstanding?
No

Additional matters – Section 59(2) Contaminated Land Management Act 1997

Is the land significantly contaminated within the meaning of the Contaminated Land Management Act 1997?
Council has no record that the land is significantly contaminated at the date of this certificate was issued.
Is the land subject to a management order within the meaning of the Contaminated Land Management Act 1997?
Council has no record that the land is subject to a management order at the date this certificate was issued.
Is the land subject to a voluntary management proposal within the meaning of the Contaminated Land Management Act 1997?
Council has no record that the land is subject to an approved voluntary management proposal at the date this was issued.

Is the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997?
Council has no record that the land is subject to an ongoing maintenance order at the date this certificate was issued.
Is the land subject to a site audit within the meaning of Contaminated Land Management Act 1997?
Council has no record that the land is the subject of a site audit at the date this certificate was issued.

Section 10.7(5) Additional Information

Tree Preservation Order

Is the Bland Tree Preservation Order applicable to the subject land?	
Lot 7044 DP 1115128	Yes
Lot 2 DP 1239669	No

Development Consents

Have any Development Consents been granted with respect to the land within the previous five (5) years?	
No	

Flood Studies

Have any Flood Studies been carried out with respect to the land?	
Lot 7044 DP 1115128	No
Lot 2 DP 1239669	No

The preceding information is provided pursuant to Section 10.7(2) and (5) of the *Environmental Assessment Act 1979* as prescribed by Schedule 4 of the *Environmental Planning and Assessment Regulation 2000* and is applicable to the subject land as of the date of this certificate.

Lesley Duncan
Manager Development and Regulatory Services

22 January 2021

Appendix C

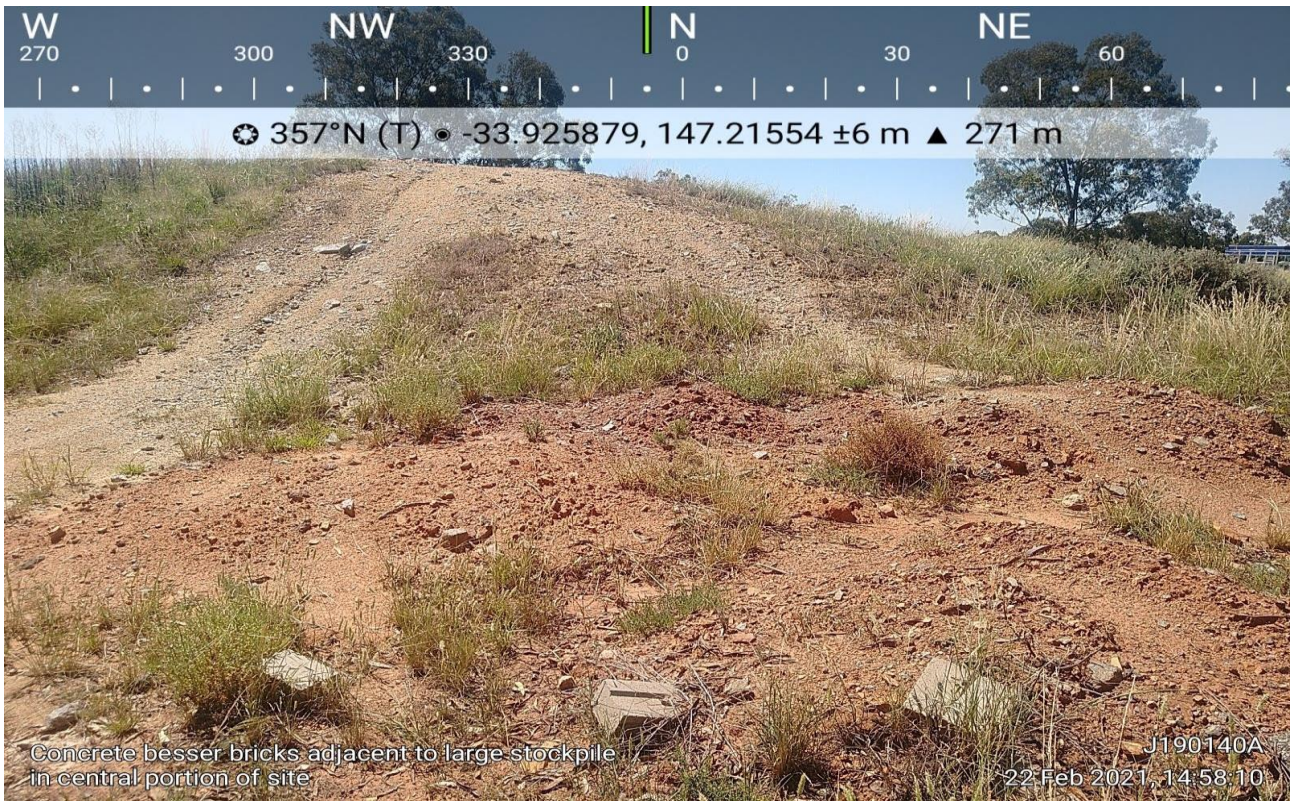
Site inspection photographs

Photograph 1 **Bituminous gravel access road connecting Boundary Street and looping through the centre of the site**

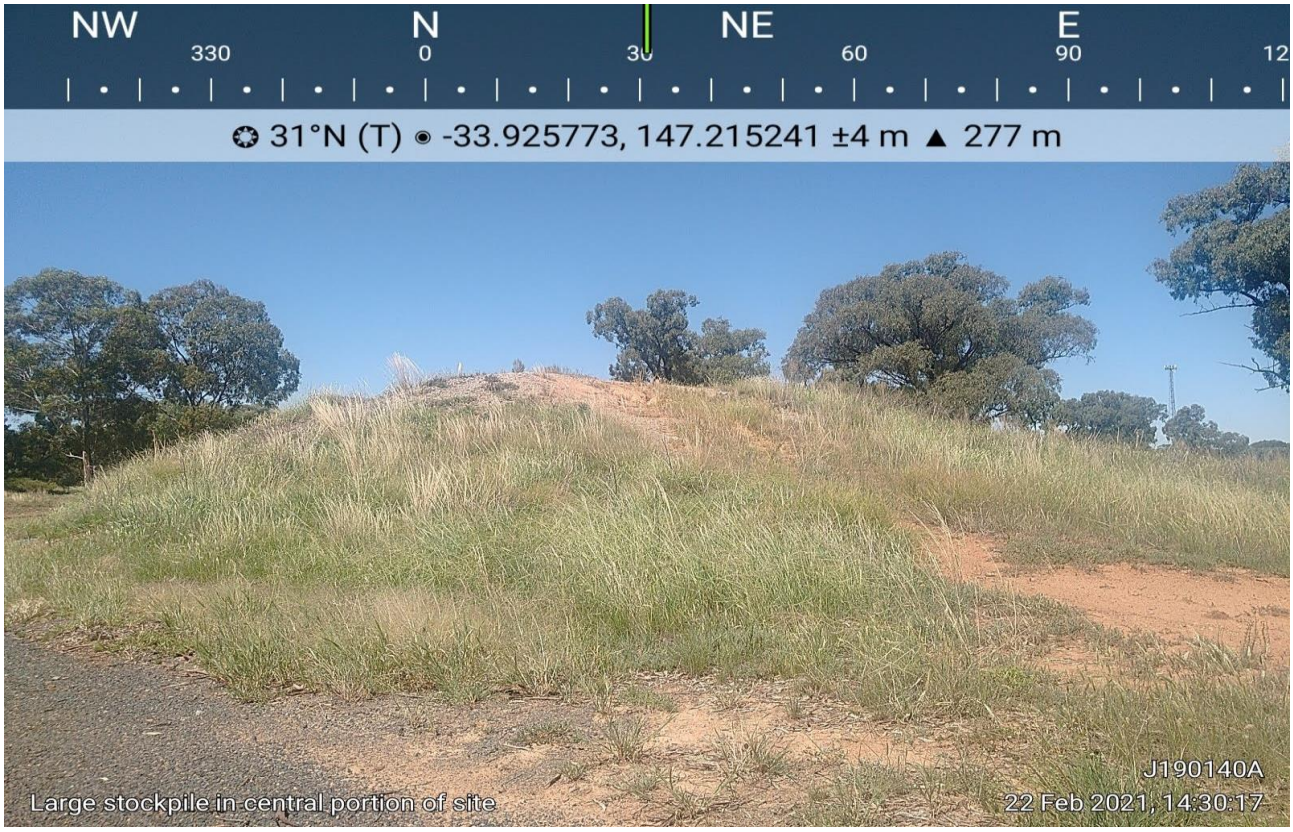
Photograph 2 **Small soil and building waste stockpiles in southwestern portion of site**

Photograph 3 **Small soil and building waste stockpiles in south-western portion of site**

Photograph 4 **Potential ACM fragment observed in small soil/waste stockpile in south-western portion of site**



Photograph 5 **Large stockpile in central portion of site**



Photograph 6 **Large stockpile in central portion of site**

Photograph 7 **Large stockpile in central portion of site**



Appendix O

Geotechnical report

EMM
creating opportunities

Evolution
MINING

Geotechnical Report

West Wyalong Mining Camp

COPP20120-GEO-REP-002-REVD

Prepared for Calibre Group Pty Ltd

8 April 2021

Xstract Mining Consultants Pty Ltd
ABN 62 129 791 279

QUALITY ASSURANCE STATEMENT

TASK	NAME	POSITION	SIGNATURE
Project Manager	Paul Woodroof	Lead Geotechnical Engineer	
Prepared by	Paul Woodroof	Lead Geotechnical Engineer	
Reviewed by	Blake Luff	Lead Geotechnical Engineer	
Approved for Issue by			

DOCUMENT CONTROL

ISSUE	DATE	ISSUE DETAILS	AUTHOR	CHECKED	APPROVED
A	12/03/2021	Issued for Internal Review	PW	BL	PW
B	18/03/2021	Updated with Laboratory Testing	PW	BL	PW
C	31/03/2021	Issued for Client Review	PW	BL	PW
D	08/04/2021	Issued for Client Review including Geophysical Study	PW	BL	PW

File Name: COPP20120-GEO-R_002-REVD

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1. Introduction

This report presents the outcomes of Xstract Mining Consultants Pty Ltd's ("Xstract") geotechnical study for the proposed mining camp located along Boundary Street, in West Wyalong, in Central New South Wales. Xstract have been engaged by Calibre Group Pty Ltd ("Calibre"), on behalf of Evolution Mining Limited ("Evolution").

This report will be updated on receipt of the mine subsidence study currently being undertaken by GBG Australia.

2. Project Overview

It is understood that Evolution are proposing to undertake an expansion to the existing Cowal gold mine. If the expansion proceeds, a new mining camp will be required to house the temporary construction team as well as members of the permanent mine operations team.

Evolution is considering a range of options to accommodate and support the required workforce for the mine's proposed expansion. The preferred option is to develop a purpose-built accommodation village in West Wyalong.

It is understood that two potential mining camp sites are being considered for the accommodation village:

- Site 1: Boundary Street, West Wyalong
- Site 2: Alternate site yet to be determined

Site 1 is the focus of the current study presented herein. A separate geotechnical study will be undertaken for Site 2 at a later date.

Site 1 is located on Boundary St, West Wyalong. The total lot area is approximately 17 ha in extent, with the proposed mine camp covering 2.4 ha. The site is presently owned by West Wyalong Local Aboriginal Land Council. The site has frontages on Boundary Street, Hyde Street and Hyde Lane/Alleena Street.

The site was previously used as a mine accommodation site (southern portion of the site), and an internal circulation road remains on site from this historic use.

The proposed layout of Site 1 is shown below in Figure 1.

Figure 1: Site 1 - Proposed Layout

3. Project Objectives

The objectives of the study were as follows:

- assess subsurface soil and groundwater conditions;
- assessment of site classification in accordance with AS 2870-2011, including recommendations to improve the site classification (if required);
- recommendations on suitable foundation options, including:
    - allowable bearing pressures and estimated settlements for shallow foundations (pad and strip footings);
    - geotechnical design parameters for piles (if required);
- assess the depth to rock (if encountered);
- assess the presence and level of groundwater (if encountered);
- provide advice on geotechnical considerations for the project;
- assessment of mine subsidence:
    - complete Electro Magnetic (EM) survey of the camp area only (2.4 ha) to identify anomalies;
    - targeted ground probing radar survey over anomalies to determine nature of anomalies.

4. Fieldwork

4.1 General

Fieldwork was conducted between the 9 to 18 March 2021. The fieldwork comprised:

- conduct a 'Dial Before you Dig' search;
- site walkover to assess site surface conditions;
- excavation of test pits using a 6 tonne excavator as follows:
    - 10 locations across the camp footprint (~2.4 ha) to assess the geotechnical conditions to a maximum depth of 2.5 m; and
    - 8 pits within the existing stockpiled material onsite.
- dynamic cone penetrometer testing at each camp footprint test pit;
- collection of Frequency-Domain Electro Magnetics (FDEM) data at approximately 2 m line spacings across the camp footprint only (~2.4 ha);
- MASW/GPR survey of any anomalies encountered during the FDEM survey; and
- collection of samples of for laboratory testing (environmental and geotechnical).

The approximate test locations are shown on Figure A1 in Appendix A.

4.2 Test Pits

Test pits were excavated at eighteen (18) locations using a 6-tonne excavator fitted with a toothed bucket. Test pits TP01 to TP10 were geotechnical test pits for assessing the subsurface profile across the site. Test pits TP11 to TP18 were environmental test pits undertaken within the stockpiles onsite.

The test pits were carried out under full-time supervision by Xstract's site personnel and logged in general accordance with Australian Standard AS1726-2017, 'Geotechnical Site Investigations'.

Test pit logs and photographs are presented in Appendix A.

Groundwater was not encountered at any test pit location. Test pits TP02, TP03, TP05, TP06 and TP08 were terminated early due to slow excavation / practical refusal on extremely weathered rock.

Dynamic cone penetrometer (DCP) tests were carried out adjacent to each test pits. The DCPs were carried out in accordance with AS 1289.6.3.2. The DCP test results are also presented on the test pit logs presented in Appendix A.

Test pit locations (horizontal co-ordinates) were recorded by Xstract with a hand-held GPS, typically accurate to around ±5 m horizontally.

Test pits were reinstated using the materials removed from the test pit, backfilled in reverse order with the replaced material tamped down with the excavator bucket and further compacted by tracking over the infilled pit. Topsoil was respread over the backfilled test pit.

4.3 Geophysical Study

A geophysical study to assess the mine subsidence risk was undertaken by GBG Australia Pty Ltd (GBG).

The objective of the geophysical study was to assess the potential for mine subsidence across the proposed camp footprint. The geophysical study included:

- Electro Magnetic (EM) survey of the camp area (2.4 ha) to identify anomalies; and
- Ground Penetrating Radar (GPR) survey to assess the nature of the anomalies.

The results of the geophysical study are included in Appendix B.

Three (3) locations from the EM survey were identified as having low conductivity which may indicate the presence of voids / cavities. These three locations are presented in Table 1 and are also shown on Figure A1.

Table 1: EM Survey – Possible Void / Cavity Locations

Target	Easting (m)	Northing (m)	Description
PV01	519923.3	6246072.3	Exceedingly low conductivity: Air filled void or electrically capacitive material
PV02	519881.3	6246062.3	Exceedingly low conductivity: Air filled void or electrically capacitive material
PV03	519830.2	6245995.0	Exceedingly low conductivity: Air filled void or electrically capacitive material

Shallow boreholes to a minimum depth of 10 m are recommended to confirm whether voids are present at the identified locations prior to construction.

Two (2) locations from the GPR survey were identified as having possible anomalies and warrant intrusive investigation at these locations as part of testing for the possible voids identified from the EM survey.

Table 2: GPR Survey – Possible Anomalies

Target	Easting (m)	Northing (m)	Description
PV04	519899.9	6245947.4	Probable surface reflection, but may warrant intrusive investigation
PV05	519843.5	6245994.7	Probable surface reflection, but may warrant intrusive investigation

Prior to any intrusive investigation, it is recommended that the anomalies / possible void locations are compared with the location of the deep sewer installed onsite to ensure that the geophysics is not picking up areas of disturbance associated with the prior installation of the sewer.

5. Geotechnical Laboratory Testing

Geotechnical laboratory testing on samples retrieved from the fieldwork activities were conducted by K&H Geotechnical Services Pty Ltd.

A summary of the laboratory tests completed is presented in Table 3. A summary of the laboratory test results is presented in Table 4.

The laboratory test certificates are included in Appendix C.

Table 3: Summary of Laboratory Tests

Laboratory Test	Test method	Number of Tests Completed
Particle Size Distribution	AS1289.3.6.1	4
Atterberg Limits including Linear Shrinkage	AS1289.3.1.1, 3.2.1, 3.3.1, 3.4.1	4
Moisture Content	AS1289.2.1.1	4
Standard Maximum Dry Density (SMDD)	AS1289.5.2.1	3
California Bearing Ratio	AS1289.6.1.1	3
Aggressivity Suite (pH, sulphate, chloride)	MPL INORG-001, INORG-081	4
Shrink-Swell Index	AS1289.7.1.1	3

Table 4: Summary of Laboratory Test Results

Test Location	Test Depth (m)	Material Description	MC (%)	Particle Size Distribution (%)			Atterberg Limits			I_{ss} (%)	SMDD (t/m^3)	OMC (%)	CBR (%)	Aggressivity Suite		
				Gravel	Sand	Fines	LL (%)	PI (%)	LS (%)					pH	Sulphate (mg/kg)	Chloride (mg/kg)
TP01	0.6 – 0.9	Clayey SAND	12.0	4	62	34	31	20	6.5	1.8	1.85	13.0	3.5	7.7	140	<500
TP04	1.5 – 2.0	Clayey SAND	19.4	8	67	25	42	13	6.5	1.1	-	-	-	8.4	60	580
TP06	0.6 – 1.1	Clayey SAND	15.9	10	56	34	40	18	8.5	1.5	1.62	20.0	11.0	6.6	160	1010
TP11	0.3 – 0.5	Gravelly Clayey SAND	2.1	31	43	26	38	9	4.5	-	1.92	10.0	8.0	9.1	120	560

Note: MC: Moisture Content LL: Liquid Limit PI: Plasticity Index LS: Linear Shrinkage SMDD: Standard Maximum Dry Density
OMC: Optimum Moisture Content CBR: California Bearing Ratio at 98% SMDD with 4.5 kg surcharge Iss: Shrink-Swell Index

6. Ground Conditions

6.1 Regional Geology and Topography

The 1:100,000 Geological Series map (Wyalong sheet) shows that the site is underlain by:

- *Czg: Predominately highly weathered granite with scattered ferruginous lag derived from mottled saprolite; colluvial sediments on plains and rises.*

6.2 Subsurface Conditions

The subsurface conditions are relatively consistent across the site and the general subsurface conditions can be summarised as comprising:

- Clayey SAND / Sandy CLAY (SC/CI/CH), pale red / pale brown, medium plasticity. Fine to coarse grained sand. Dry to moist. Typically stiff to hard. Present from surface to depths of typically 0.9 m to 1.4 m; overlying
- Extremely Weathered Rock, red/brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Typically hard consistency to very low strength rock. Present to maximum depth of excavation (2.2 m to 2.5 m).

The above rock type has not been differentiated as the extremely weathered nature of the material did not allow an assessment of the rock type.

Locally a thin layer of FILL: Sandy Clayey GRAVEL/COBBLES was present over the natural soils. The fill can be described as:

- FILL: Gravelly Clayey SAND / Sandy Clayey GRAVEL (SC/GC/GP), pale brown / white / yellow, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, high to very high strength. Sand is fine to coarse grained. With fines. Low to medium plasticity clayey fines. Dry. Dense / very dense.

The topsoil layer was typically around 50 mm to 100 mm thick, with the exception of TP03, TP04 and TP08 where the topsoil / rootlets was around 150 mm to 200 mm thick.

Competent rock was not encountered in any of the test pits within the investigated depth (up to 2.5 m). Slow progress / practical refusal occurred in several test pits (TP02, TP03, TP05, TP06 and TP08) due to on extremely weathered rock at depths of between 2.2 m and 2.4 m.

6.3 Groundwater

Groundwater was not encountered in any of the test pit excavations.

Xstract is not aware of any publicly available groundwater data that covers the site. Based on the historical underground mining in the area, it is expected that groundwater will be at a significant depth below the surface (greater than 10 m).

A perched groundwater level overlying the clayey soils is likely during and after significant rainfall events in the area.

7. Discussion

7.1 Site Suitability

We consider that the site is geotechnically suitable to support the proposed mining camp provided:

- the site preparation requirements in Section 7.4 are undertaken; and
- confirmatory borehole drilling at the nominated locations (Section 4.3) do not encounter any voids / cavities.

7.2 Site Classification

The site classification in accordance with AS 2870-2011 “Residential Slabs and Footings” was assessed and a site classification of “Class M-D” is considered appropriate.

The above site classification is based on:

- the site not being underlain by mining related voids, which must be confirmed as per Section 4.3; and
- Earthworks for the site being undertaken in accordance with the site preparation recommendations in Section 7.4.

Note: AS2870-2011 is typically limited to single and double storey residential buildings with maximum bearing pressures of 100 kPa. Although not technically applicable to the development, the provided site classification can be used as a guide to the expected shrink-swell movement of the soils that could be expected.

7.3 Soil Aggressivity Exposure Classification

Soil samples were collected for laboratory testing of soil aggressivity. The exposure classification for concrete and steel foundations founded in soil has been assessed using:

- AS 2159-2009 – Piling-Design and Installation; and
- AS 3600-2009 – Concrete Structures.

The aggressivity laboratory test results are presented in Appendix D.

The exposure classification is based on Soil Conditions B (low permeability soils and soils above groundwater).

The test results were assessed against the exposure classification for concrete in AS 3600-2009. The results of the testing indicate the following an exposure classification of “A1”.

The test results were assessed against the exposure classification for steel piles in AS 2159-2009. The results of the testing indicate an exposure classification of “Non-Aggressive”

7.4 Earthworks

7.4.1 General

Earthworks should be carried out in accordance with AS3798-2007 “Guidelines on Earthworks for Commercial and Residential Developments”.

Site preparation measures outlined below are aimed at preparation of the site prior to construction of buildings and pavement subgrades.

7.4.2 Clearing & Topsoil Strip

Clearing and Topsoil striping activities that will be required are as follows:

- Remove vegetation scheduled for removal (if present), including localised grubbing out of roots. All grass, root matter, vegetable matter and any other organic or deleterious material shall be stockpiled and removed off-site.

- Strip topsoil where present. We expect that on average a 100 mm topsoil strip will be adequate. We note that small localised areas of the site had slightly thicker topsoil / rootlet present, however other areas had limited vegetation / topsoil present and will not require any stripping. Topsoil must be removed off-site or stockpiled for potential reuse in non-structural areas. Topsoil must not be reused as structural fill.
- Remove any uncontrolled fill encountered and dispose off-site (i.e. small stockpile present around the site). Refer to approved fill (Section 7.5) for re-use of the large stockpile present in the middle of the site.

Existing services traversing the site that will remain will need to be either protected or relocated and any design for the site will need to take this in to account.

7.4.3 Subgrade Preparation

After the site has been stripped / cut to the satisfaction of the Geotechnical Engineer / Site Superintendent, the exposed surface under structural areas should be proof compacted using a roller (i.e. 8 tonne roller or larger), capable of operating in variable frequency modes.

The following proof compaction procedure should be followed:

- Moisture condition the in-situ material.
- A minimum of 6 passes shall be made over the whole area with the roller operating in high amplitude mode. Passes should include a minimum overlap of 20%.
- Any areas that have not improved by the compaction (i.e. areas that deform or heave excessively under rolling) should be removed and replaced with approved fill (Section 7.5).

7.4.4 Fill Placement

The following fill placement procedure is recommended:

- Moisture condition the material to within 2% of optimum moisture content (OMC).
- Place approved fill in loose lift layers of not greater than 300 mm thickness.
- Compact the layer to achieve the density specified in Section 7.4.6. Each layer should be compacted by suitable compaction equipment, and carefully controlled to ensure even compaction over the full lift footprint and depth of each layer.

Thicker lifts of fill during earthworks may be acceptable, however, the earthworks contractor must demonstrate that the compaction plant is capable of compacting the full thickness of the fill lifts to the specified density. This methodology would need to be reviewed and approved by the Site Superintendent / Geotechnical Engineer.

7.4.5 Footing Preparation

The following procedure is recommended for preparation of shallow footing and slab on-ground locations:

- Fill where required to the formation levels with approved fill (Section 7.5), placed in accordance with Section 7.4.4.
- Excavate footing locations and compact to the requirements in Section 7.4.6. Where soft areas are present, excavate and replace with compacted approved fill (Section 7.5).

7.4.6 Compaction Requirements

The in-situ soils, fill material, and pavement materials should be compacted to achieve the minimum density requirements specified in Table 5.

Table 5: Compaction Requirements

Location		Cohesionless Soils	Cohesive Soils
		Modified Maximum Dry Density (MMDD)	Standard Maximum Dry Density (SMDD)
In-situ soils	To a depth of 0.3 m under structural areas	95%	98%
Fill	All fill below footings and floor slabs	95%	98%
Pavements	Subgrade (minimum 300 mm thick underlying sub-base)	95%	98%
	Sub-base compaction	95%	98%
	Base course compaction	98%	100%

The frequency of compaction testing shall be in accordance with the compaction testing requirements presented in Table 6.

Table 6: Compaction Testing Requirements

Location	Testing Requirements
Proof compaction of in-situ soils	1 test per 500 m^2
Lift of approved fill	Greater of 1 test per 500 m^2 or 2 tests per layer
Pavement subgrades	1 test per 500 m^2
Concrete Slabs	1 test per 10 m x 10 m grid

Caution is required when vibratory compaction is undertaken close to existing buried services and structures. Tynan (1973)[1] provides assistance with the selection of compaction equipment for use adjacent to structures and buried services.

7.5 Approved Fill

Imported granular fill must comply with the material requirements as stated in AS 3798-2007, “Guidelines on Earthworks for Commercial and Residential Developments”.

The in-situ natural Sandy CLAY / Clayey SAND is considered suitable for re-use as structural fill of excavations in the clayey soils. The in-situ extremely weathered rock should not be reused as fill.

The main stockpile on-site (Clayey Gravely SAND / Clayey Sandy GRAVEL) may be considered geotechnically suitable for reuse as structural fill, however, removal of oversized material (material >50 mm diameter) will be required. This could be achieved with a screening plant or due to the small volumes involved, using an excavator with a skeleton bucket (with maximum 50 mm apertures). Environmental suitability of the fill for re-use as structural fill must be assessed once the proposed use is known.

Where doubt exists regarding the suitability of a material for reuse as fill, a geotechnical engineer must be engaged to inspect and approve its proposed use.

[1] Tynan (1973) Ground Vibration and Damage Effects on Buildings, Australia Road Research Board, Special Report No. 11.

7.6 Excavatability

The test pitting was undertaken using a 6 tonne track mounted excavator using a 600 mm toothed bucket. Excavations conditions within the surficial clayey / sandy layers and top 1 m of the extremely weathered rock unit were generally easy to moderate. Hard digging or practical refusal of the bucket was typically encountered in the extremely weathered rock at depths of greater than 2.4 m.

Excavations extending below about 2.0 m to 2.5 m depth may require the use of larger excavator (>20t) and the use of a rock breaker to aid with excavating.

7.7 Footings

7.7.1 General

The ground conditions encountered across the site are considered suitable to support conventional shallow foundations or pier foundations.

The following sections present the allowable bearing pressures and estimated settlements for pad foundations. These assume that the earthworks and footing preparation have been carried out in accordance with Section 7.4.

Allowable bearing pressures and estimated settlements for strip footings or footings with different dimensions can be provided if required.

7.7.2 Design Assumptions

The following has been assumed in the assessment:

- Groundwater to be greater than 10 m below the base of the footings;
- The site surface levels surrounding the footing are flat;
- Load eccentricity is less than 10% of footing width;
- Load inclination (H/V) is less than 10%; and
- Footings are located a minimum of their largest dimension away from adjacent footings.

7.7.3 Shallow Footing Design

Recommendations of allowable bearing pressures and the estimated settlements for pad and strip footings are presented in Table 7 and Table 8 assuming a range of dimensions for the foundations and embedment depths of 0.3 m below the existing ground level.

Table 7: Pad Foundations - Allowable Bearing Pressures and Estimated Settlements

Embedment Depth (m)	Minimum Footing Dimension (m)	Allowable Bearing Pressure (kPa)	Estimated Settlement (mm)
0.3	0.5	100	<5
	0.75	100	5-10
	1.0	100	5-10
	1.5	100	10-15
	2.0	100	15-20

Table 8: Strip Foundations - Allowable Bearing Pressures and Estimated Settlements

Embedment Depth (m)	Strip Footing Width (m)	Allowable Bearing Pressure (kPa)	Estimated Settlement (mm)
0.3	0.5	90	5-10
	0.75	90	10-15
	1.0	90	15-20
	1.5	90	20-25

The allowable working bearing pressures are considered to be an upper limit for footings at shallow depth. The reason for limiting bearing pressures is to limit total and differential settlements as well as the risk of long-term creep settlement which may occur under high bearing pressures.

The estimated settlements indicated in the above tables do not include interaction effects from footings founded near other footings. Interaction effects will need to be considered if the spacing between adjacent footings is smaller than the dimension of the footings (i.e. the centre-to-centre spacing between footings is less than twice the width of the footings).

7.7.4 Pile Foundation Design

7.7.4.1 General

Short pile foundations (piers) may be considered for use to support the proposed structures. Small diameter bored piles or screw piles are likely to be the most suitable pile type.

The pile design / assessment is to be confirmed by the piling contractor.

7.7.4.2 Assessment Methodology

Shaft Friction (Compression) – Bored Piles

The ultimate shaft resistance of piles installed in cohesive soils was estimated using the following equation from Fleming et al. (2009):

$$f_s = \alpha\, s_u$$

Where: $f_s = Ultimate\ shaft\ resistance\ (kPa)$

$\alpha = Dimensionless\ reduction\ factor$

$s_u = Undrained\ shear\ strength\ (kPa)$

The reduction factor (α) is dependent on the strength of the clay, the vertical overburden stress and pile type. Kulhawy and Jackson (1989) provided the following equation to compute α:

$$\alpha = 0.21 + 0.26\frac{P_a}{s_u}$$

Where: $P_a = Atmospheric\ Pressure, taken\ as\ 101.3\ kPa$

$s_u = Undrained\ shear\ strength\ (kPa)$

It is recommended that the shaft resistance for the top 1.5 times pile diameter below ground level is ignored due to potential for post-holing.

Shaft Friction (Tension) – Bored Piles

The shaft friction in tension has been taken as 80% of the shaft friction in compression.

End Bearing

The ultimate end bearing resistance (f_b) of piles installed in cohesive soils was estimated using the following equation:

$$f_b = 9s_u$$

Where: $s_u = Undrained\ shear\ strength\ (kPa)$

Cone Pull-Out

The assessment of pile cone pull-out (due to tension on the pile) must be undertaken by the piling contractor, based on the proposed pile type and installation method. We can assist with this if required.

Lateral Pile Assessment

The lateral pile assessment must be undertaken by the piling contractor, based on the proposed pile type and installation method. We can assist with this if required.

7.7.4.3 Geotechnical Strength Reduction Factor

The geotechnical strength reduction factor (Φ_g) for piles must be assessed in accordance with AS2159-2009 – Piling: Design and Installation.

Assuming that no testing of the piles is undertaken, a Φ_g of 0.4 is considered applicable.

7.7.4.4 Axial Pile Assessment – Bored Piles

The estimated axial pile design geotechnical strength (compression and tension) of a 150 mm and 200 mm diameter bored pile are presented in Table 9.

Table 9: Estimated Design Geotechnical Strength – Bored Piles

Pile Type		Pile Embedment Depth (m)	Design Geotechnical Strength - Axial Compression Capacity (kN)	Design Geotechnical Strength - Axial Tension Capacity (kN)
Bored Pile	150 mm dia	2 m	12	10
		3 m	20	16
		4 m	30	24
	200 mm dia	2 m	15	12
		3 m	30	24
		4 m	40	32

The lateral pile assessment and cone pull-out must be undertaken separately.

7.7.4.5 Axial Pile Assessment – Screw Piles

The estimated axial pile design geotechnical strength (compression and tension) for screw piles for a 300 mm and 450 mm helix are presented in Table 9.

Table 10: Estimated Design Geotechnical Strength – Screw Piles

Pile Type		Pile Embedment Depth (m)	Design Geotechnical Strength - Axial Compression Capacity (kN)	Design Geotechnical Strength - Axial Tension Capacity (kN)
Screw Pile	300 mm helix dia	2 m	15	7
		3 m	20	10
		4 m	25	12
	450 mm helix dia	2 m	30	8
		3 m	45	15
		4 m	55	15

Note: Due to the in-situ material grading into a weathered rock with depth, early refusal of the screw piles could occur below about 2.0 m to 2.5 m depth.

The lateral pile assessment and cone pull-out must be undertaken separately.

7.8 Pavement Design

The following design California Bearing Ratio (CBR) values are recommended:

- Sandy CLAY / Clayey SAND (typically top 1.0 m of natural profile) – Design CBR 3.5%.
- FILL: Clayey Gravelly SAND (main stockpile) – Design CBR 8%

The above design CBR values are based on the subgrade being compacted to at least 98% SMDD (cohesive soils) or 95% MMDD (cohesionless soils) and the site preparation measures in Section 7.4 are undertaken.

Trafficking of the surficial clayey soils is not recommended during or immediately after rainfall events as the soil is likely to soften and result in trafficability issues.

8. Limitations of this Report

The information provided in this report is based on the data available at the time of assessment, engineering practice, judgement and experience.

The inherent uncertainty in the geological findings presented herein must be recognised. Variations to the ground conditions are likely and allowance must be made in the design and construction work for potential vertical and lateral variability in the extent of in-situ subsoil conditions.

It is also important to note that some information detailed in this report has been collated from other sources. Xstract has not verified that this information is accurate and does not warrant that it is accurate.

The ground conditions within the project area may vary between any given assessed location. Ground conditions may also change or be modified as a result of anthropogenic events (e.g. construction, failure of subsurface infrastructure, site contamination) and natural events (e.g. flooding, earthquakes, landslides, significant weather events).

This report specifically excludes contaminated site assessment, acid sulfate soils, asbestiform minerals risk assessment, and hydrological and hydrogeological assessments.

West Wyalong Mining Camp

Appendix A Test Pit Reports

LEGEND:

- Geotechnical Test Pit Location
- Environmental Test Pit Location
- EM Survey - Possible Void Location
- Approximate Stockpile Footprint

N

Map data: Google, Maxar Technologies

SCALE:	Not to Scale
DRAWN:	PW
DATED:	8/04/2021
CHECKED:	BL
DATED:	8/04/2021

XSTRACT mining consultants

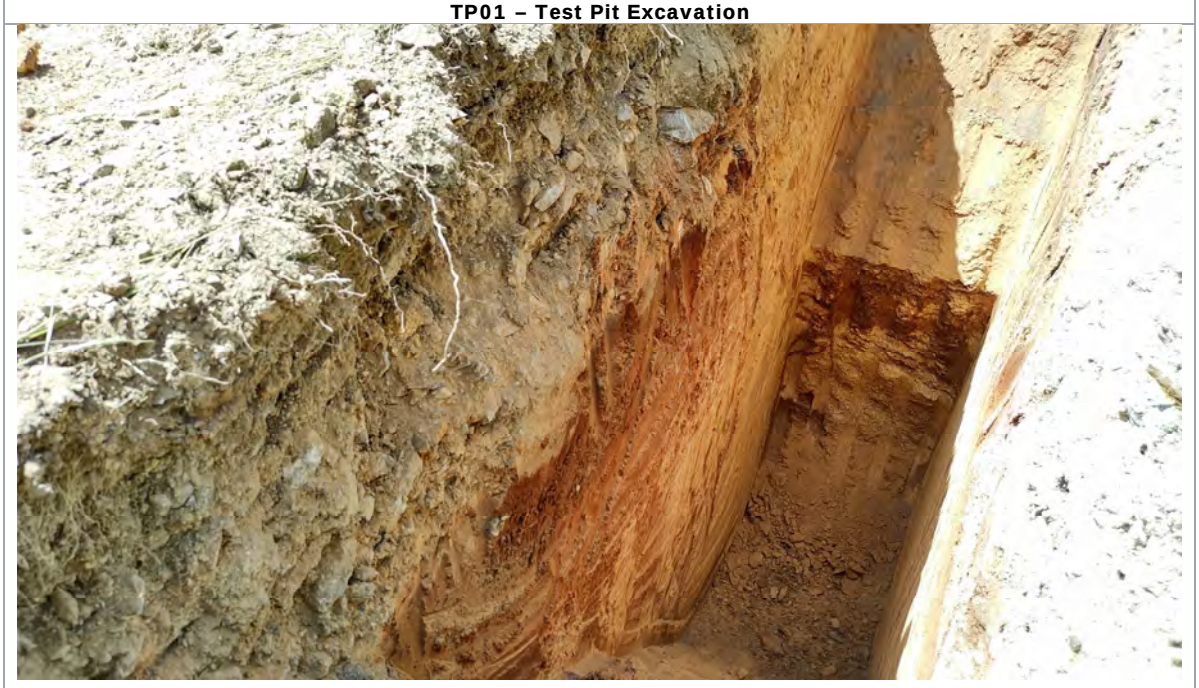
CLIENT	EVOLUTION MINING
PROJECT	PROPOSED MINING CAMP
LOCATION	BOUNDARY STREET, WEST WYALONG
TITLE	TEST LOCATION PLAN
JOB NO.	COPP20120
FIG NO.	FIGURE A1
REV NO.	REV 0

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519937E, 6246081S		

Test Pit – TP01

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Sandy Clayey GRAVEL/COBBLES (GP/GC), pale brown / white / yellow, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, high to very high strength. Sand is fine to coarse grained. With fines. Dry. Dense / very dense.	7
0.1		11
0.2		13
0.3		9
0.4		6
0.5	Sandy CLAY / Clayey SAND (CL/CI/SC), pale red/ pale brown, low to medium plasticity, fine to coarse grained sand. Dry to moist. Very stiff to hard.	5
0.6		10
0.7		15+
0.8		
0.9		
1.0		
1.1		
1.2	Extremely Weathered Rock, pale brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	
1.3		
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
2.5		
	EOH @ 2.5 m Target Depth No groundwater encountered Trench excavation stable.	

TP01 – Test Pit Excavation



Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519895E, 6246102S		

Test Pit – TP02

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets. Dry	7
0.1	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Dry to moist. Very stiff to hard.	12
0.2		21
0.3		20+
0.4		
0.5		
0.6		
0.7		
0.8		
0.9		
1.0	Extremely Weathered Rock, pale brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	
1.1		
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
	EOH @ 2.4 m Slow Progress / Refusal on Extremely Weathered Rock No groundwater encountered Trench excavation stable.	

TP02 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519873E, 6246063S		

Test Pit – TP03

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets. Dry	6
0.1		12
0.2	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Dry to moist. Very stiff to hard.	20+
0.3		
0.4		
0.5		
0.6		
0.7		
0.8		
0.9		
1.0	Extremely Weathered Rock, pale brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	
1.1		
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
	EOH @ 2.2 m Slow Progress / Refusal on Extremely Weathered Rock No groundwater encountered Trench excavation stable.	

TP03 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519825E, 6246030S		

Test Pit – TP04

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets. Dry	3
0.1		4
0.2	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Dry to moist. Localised pocket of organics (ash/charcoal) at 0.3 m (50 mm thick). Stiff to very stiff, becoming hard below 0.9 m.	5
0.3		6
0.4		6
0.5		6
0.6		6
0.7		6
0.8		7
0.9		16
1.0		20+
1.1	Extremely Weathered Rock, pale brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
2.5		
	EOH @ 2.5 m Target Depth No groundwater encountered Trench excavation stable.	

TP04 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519818E, 6246004S		

Test Pit – TP05

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets. Dry	7
0.1	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Trace fine gravel. Dry to moist. Very stiff, becoming firm below 0.3 m.	12
0.2		10+
0.3		
0.4		
0.5	Below 0.5 m becoming moist/wet, firm.	
0.6		
0.7		2
0.8		3
0.9		3
1.0		3
1.1		4
1.2		4
1.3	Extremely Weathered Rock, pale brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	4
1.4		7
1.5		10
1.6		10+
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
	EOH @ 2.4 m Slow progress / Refusal on extremely weathered rock. No groundwater encountered Trench excavation stable.	

TP05 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519884E, 6245974S		

Test Pit – TP06

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets in top 100 mm. Dry.	6
0.1		7
0.2	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Dry to moist. Very stiff, becoming hard below 0.7 m.	7
0.3		6
0.4		6
0.5		6
0.6		14
0.7		10+
0.8		
0.9		
1.0		
1.1		
1.2		
1.3	Extremely Weathered Rock, red/brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
	EOH @ 2.4 m Slow progress / Refusal on extremely weathered rock No groundwater encountered Trench excavation stable.	

TP06 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519963E, 6245940S		

Test Pit – TP07

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets. Dry	7
0.1	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Dry to moist. Very stiff, becoming hard below 0.5 m.	8
0.2		27
0.3		20+
0.4		
0.5		
0.6		
0.7		
0.8		
0.9		
1.0	Possibly Residual Soil, grading into Extremely Weathered Rock. Becoming Dry.	
1.1		
1.2		
1.3		
1.4		
1.5	Extremely Weathered Rock, red/brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard.	
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
2.5		
	EOH @ 2.5 m Target Depth No groundwater encountered Trench excavation stable.	

TP07 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519943E, 6245980S		

Test Pit – TP08

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Clayey SAND / Sandy CLAY (SC/CL), pale brown, fine to medium grained, low plasticity. Trace rootlets. Trace rubbish (plastic, glass). Dry.	6
0.1		7
0.2	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, fine to coarse grained sand. Dry to moist. Very stiff, becoming hard below 1.2 m.	12
0.3		10+
0.4		Excavate to 0.8 m
0.5		
0.6		
0.7		
0.8		6
0.9		7
1.0		7
1.1		8
1.2		16+
1.3		
1.4		
1.5	Extremely Weathered Rock, red/brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace to with fine to coarse grained, quartz sand. Locally white. Dry. Hard to very low strength rock.	
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
	EOH @ 2.4 m Slow progress / refusal on weathered rock No groundwater encountered Trench excavation stable.	

TP08 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519937E, 6246042S		

Test Pit – TP09

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Sandy GRAVEL/COBBLES (GP), pale brown / white, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to high strength. Sand is fine to coarse grained. With clayey fines. Dry. Medium dense becoming dense / very dense below 0.8m.	3
0.1		3
0.2		3
0.3		4
0.4		6
0.5		7
0.6		6
0.7		7
0.8		12+
0.9		
1.0		
1.1	Sandy CLAY / Clayey SAND (CI/SC), pale red/ pale brown, medium plasticity, with fine to coarse grained sand. Dry. Hard below 0.8m.	
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
1.8		
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
2.5		
	EOH @ 2.5 m Target Depth No groundwater encountered Trench excavation stable.	

TP09 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519905E, 6246027S		

Test Pit – TP10

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Clayey Sandy GRAVEL/COBBLES (GP/GC), pale brown / white, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to medium strength. Sand is fine to coarse grained. Clay is low plasticity. Trace roots / rootlets to 0.3 m depth. Dry. Medium dense.	6
0.1		5
0.2		3
0.3	Sandy CLAY (CI), red/brown, medium plasticity, with fine to coarse grained sand. Dry to moist. Stiff becoming hard below 0.8m.	2
0.4		3
0.5		5
0.6		6
0.7		5
0.8		15+
0.9		
1.0		
1.1		
1.2		
1.3		
1.4		
1.5		
1.6		
1.7		
1.8	Extremely Weathered Rock, red/brown mottled white/yellow. Recovered as Clayey SAND, medium plasticity, trace fine to coarse grained, quartz sand. Veins up to 50 mm thick of above Sandy CLAY locally present within unit. Dry. Hard to very low strength rock.	
1.9		
2.0		
2.1		
2.2		
2.3		
2.4		
2.5		
	EOH @ 2.5 m Target Depth No groundwater encountered Trench excavation stable.	

TP10 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519920E, 6246041S		

Test Pit – TP11

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Gravelly Clayey SAND (SC), pale brown, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to medium strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP11 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519925E, 6246035S		

Test Pit – TP12

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Clayey Sandy GRAVEL/COBBLES (GP/GC), pale brown/pale red, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to medium strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP12 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519918E, 6246037S		

Test Pit – TP13

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Clayey Sandy GRAVEL/COBBLES (GP/GC), pale brown, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to medium strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP13 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519911E, 6246043S		

Test Pit – TP14

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Clayey Sandy GRAVEL (GP/GC), pale brown/pale red, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to high strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP14 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519914E, 6246051S		

Test Pit – TP15

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Clayey Sandy GRAVEL/COBBLES (GP/GC), pale brown/pale red, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to medium strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP15 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519929E, 6246052S		

Test Pit – TP16

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Clayey Sandy GRAVEL/COBBLES (GP/GC), pale brown, fine to coarse grained, sub-angular to sub-rounded gravel and cobbles, low to high strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP16 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519830E, 6246042S		

Test Pit – TP17

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	FILL: Gravelly Clayey SAND (SC), pale brown/pale red, fine to coarse grained, sub-angular to sub-rounded gravel, low to medium strength. Sand is fine to coarse grained. Clay is low to medium plasticity. Trace building debris (brick fragments). Dry.	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP17 – Test Pit Excavation

Job Number:	COPP20120	**Date Performed:**	24/02/2021
Client:	Evolution Mining	**Logged By:**	PW
Project:	Proposed Mine Camp	**Machine:**	Hyundai 55-9
Location:	Boundary Street, West Wyalong		
Coordinates (MGA94):	519859E, 6245975S		

Test Pit – TP18

Test Depth (m)	Stratigraphy	DCP Blow Count / 100 mm
0.0	TOPSOIL: Gravelly Clayey SAND, brown, fine to medium grained. Clay is low to medium plasticity. Gravel is fine to medium grained. Trace rootlets and organic fines. Trace building debris (bricks / concrete / glass)	No DCP Stockpile Sample
0.1		
0.2		
0.3		
0.4		
0.5		
	EOH @ 0.5 m Target Depth	

TP18 – Test Pit Excavation

West Wyalong Mining Camp

Appendix B Mine Subsidence Study

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Draft Report

Geophysical Investigation to Locate Possible Mine Workings Within "Site One", West Wyalong, NSW.

Date: 8 April 2021

Job Number: GBGA2425

Author: Jamie Speer

Reviewed:

SHALLOW GEOPHYSICAL INVESTIGATIONS

Contents

DISTRIBUTION

Revision	Electronic	Paper	Issued to
Draft	1	0	Paul Woodroof, Xstract Group
1			
2			
Etc.			

1 INTRODUCTION

At the request of Xstract Group, GBG Australia Pty Ltd (GBG) carried out a geophysical investigation at "Site One", Boundary Street, West Wyalong, NSW from 16th to 19th & 31st March and 1st April 2021. This report presents the findings of the investigation undertaken.

2 GEOPHYSICAL INVESTIGATION SITE

The investigation area is located off Boundary Street, West Wyalong, NSW. The extent of the site is shown in Figure 1 below.

Figure 1. Investigation site, extent of the survey is outlined in yellow. Image from Google Earth.

3 DATA ACQUISITION, DATA QUALITY AND PROCESSING

3.1 FREQUENCY-DOMAIN ELECTRO-MAGNETICS (FDEM)

3.2 FREQUENCY-DOMAIN ELECTRO-MAGNETICS (FDEM)

FDEM data was acquired using a GSSI EMP-400 electromagnetic profiler. The system utilised three frequencies (1 kHz, 3 kHz & 5 kHz) at one time. The resulting induced secondary fields measured by the receiver is split into in-phase and quadrature components, expressed in parts per million against the primary field strength, providing discrete readings of bulk ground conductivity. Depth of penetration is inverse to the frequency used, as such the lower the frequency, the higher the depth of penetration. By

utilising multiple frequencies, a 2D depth profile can be constructed if enough data is collected. FDEM data was collected at approximately 1 to 2 m line spacings with the instrument both vehicle mounted, and hand carried as shown in Figures 2 & 3 below.

FDEM data was recorded continuously at one second intervals as the instrument is carried along the profile line. The EM Profiler is at waist height, positioned horizontally and at right angles to the profile being recorded. Spatial positioning was obtained in real time by using a GPS receiver connected to the EM profiler. A photograph of the FEM data collection is shown in Figures 2 and 3 below. Data was gridded, and contour plots produced using Surfer. The results of the FDEM survey are supplied in Appendix A as Drawings GBGA2425-01 & 02.

The collected data is of good quality with repetition of some profile returning the same results. However, due to failure of the connection between the GPS and the EM Profiler, data could not be reviewed onsite. After correction of some of the GPS data offsite it was decided to collect additional data on 31ST March and 1st April.

Figure 2. FDEM setup for vehicle mounted data collection.

Data was exported to a suitable format using MagMap2000 by Geometrics. The exported files were incorporated into a single file using Excel and then imported to Surfer by Golden Software.

The data was gridded using the Krigging Method and plotted as both Apparent Conductivity and In Phase (magnetic Susceptibility) for each frequency. The collected data is of good quality with repetition of some profile returning the same results. However, due to failure of the connection between the GPS and the EM Profiler, data could not be reviewed onsite. After correction of some of the GPS data offsite it

Figure 3. FDEM setup for hand carrying data collection.

3.3 GROUND PENETRATING RADAR (GPR)

It was initially planned to collect Ground Penetrating Radar (GPR) data from a series of profiles at 1 m centres, in one direction, across the site of any anomaly mapped with FDEM. Due to failure of the connection between the GPS and the EM Profiler, data could not be reviewed onsite to locate possible anomalies for targeting with the Ground Penetrating Radar. As no targets were mapped during initial FDEM data collection, five long GPR profiles were collected on the morning of 19th March 2021. The location of the collected profiles is given in Drawing GBGA2425-03, attached in Appendix A

GPR data was collected using a GSSI SIR 3000 system with a – 200 MHz antenna, providing maximum imaging depths of approximately 3 to 4 m. The antenna was mounted in a cart and vehicle towed along each transect. The GPR system operator being in the vehicle with a spotter walking behind the antenna, Figure 4 below shows the GPR survey in progress.

Raw data was viewed in real time by the operator. Data was downloaded after the collection to undertake some basic Quality Control QC processing to assess the data.

Data was processed in ReflexW, version 9.1. Data processing included the following steps: -

- Static Correction – to correct the signal to the ground surface.
- Background Removal – to remove static noise bands from the data.
- Colour Palette Selection – viewing of the data profiles to evaluate the best palette to accentuate features present within the profiles.
- Exporting and sizing of the data profiles for presentation

Figure 4. Collection of GPR data at the site

4 RESULTS AND INTERPRETATION

The results of the geophysical investigation carried out have been provided in the following drawings attached in Appendix A of this report:

- GBGA2425-01 – FDEM Plots of Apparent Conductivity Results
- GBGA2425-02 – FDEM Plots of In-Phase Results
- GBGA2425-03 – Location of Collected Ground Penetrating Radar Profiles

Appendix B -Images of Processed GPR Profiles

4.1 FDEM RESULTS

The Conductivity plots included highlight the general site conductivity at three different depth, Table 1 below show the theoretical range of the instrument and our expected depth considering some rainfall during the investigation.

Table 1: Skin Depth (theoretical penetration) of the frequencies used and expected depth on the site.

Frequency	Skin Depth (m) Range	Expected Depth (m) @ 75% of Skin Depth
1 kHz	4-6	3 – 4.5
3 kHz	7-9	5.25 – 6.75
5 kHz	11-14	8.25 – 10.5

Generally, the interpretation placed on the data is that the majority of the site consists of a majority of clay material or weathered material to depth, shown as yellow and green in Drawing GBGA2425-01.

There are areas of higher conductivity mapped, shown as orange and red in the plots, these are consistent with disturbed ground or material dumps on the site. The isolated red points on the plots coincide with infrastructure and metal dumped on the site or where data was collected close to a fence.

Three areas of extremely low conductivity (or electrically capacitive material), these are plotted as blue areas on the 3 kHz and 1 kHz data plots. It is possible that these areas are locations of voids and should be investigated. The likely depth to these targets is between 5 and 8 metres. However, they may be as deep as 9 metres below the current ground level. The locations of the centre of these areas are given in Table 2 below.

Table 2: Locations of possible voiding found from FDEM Investigation: Datum WGS84 UTM Zone 55H

Target	Easting (m)	Northing (m)	Description
1	519923.3	6246072.3	Exceedingly low conductivity: Air filled void or electrically capacitive material
2	519881.3	6246062.3	Exceedingly low conductivity: Air filled void or electrically capacitive material
3	519830.2	6245995.0	Exceedingly low conductivity: Air filled void or electrically capacitive material

Drawing GBGA2425 shows the results of the In-Phase data collection over the site. This data is representative of magnetic susceptibility and highlights probable material dumped on site and or metal wase on the site. There is a linear feature in evidence that is highlighted as a possible service.

4.2 GPR RESULTS

The GPR did not reveal any anomalies at depth. However, the depth of penetration appears to have been limited to approximately 3.5 m.

Files 1 & 2 both display anomalies that have been highlighted in the images in Appendix B. These appear to be from a surface air wave reflection as they have air velocity of 0.3 m per nanosecond. However, both are at locations of possible infrastructure and may warrant physical investigation. The locations are approximately as given in Table 3 below.

Table 3: Locations of anomalies found from GPR Investigation: Datum WGS84 UTM Zone 55H

Target	Easting (m)	Northing (m)	Description
From File 1	519899.9	6245947.4	Probable surface reflection, but may warrant physical investigation
From File 2	519843.5	6245994.7	Probable surface reflection, but may warrant physical investigation

5 CONCLUSIONS

FDEM and GPR data was collected over the area known as “Site One” in West Wyalong. Instrument communication with the GPS failed during the first visit to site and a return visit was required to acquire supplemental data from parts of the site.

From the FDEM three low conductivity regions were mapped and have be highlighted for possible physical investigation. Also, a linear feature is in evidence in the In-Phase plots that has been highlighted as a possible service.

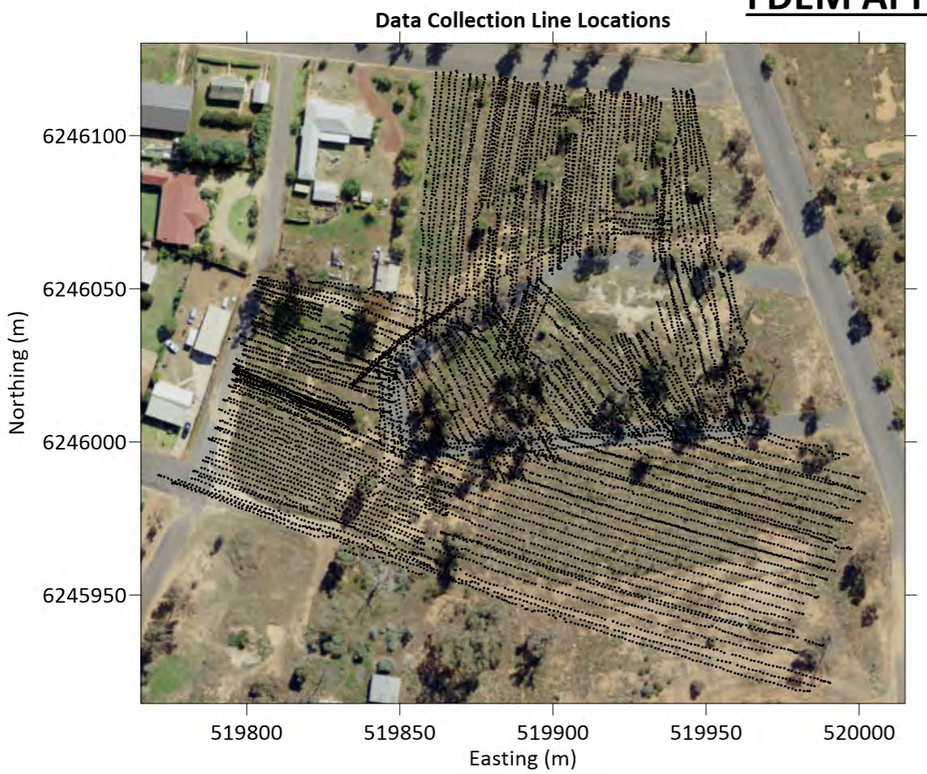
From the GPR data two anomalies have been highlighted. The anomaly plotted from File 1 appears to be coincident with the location of the possible service highlighted in the In-Phase FDEM data.

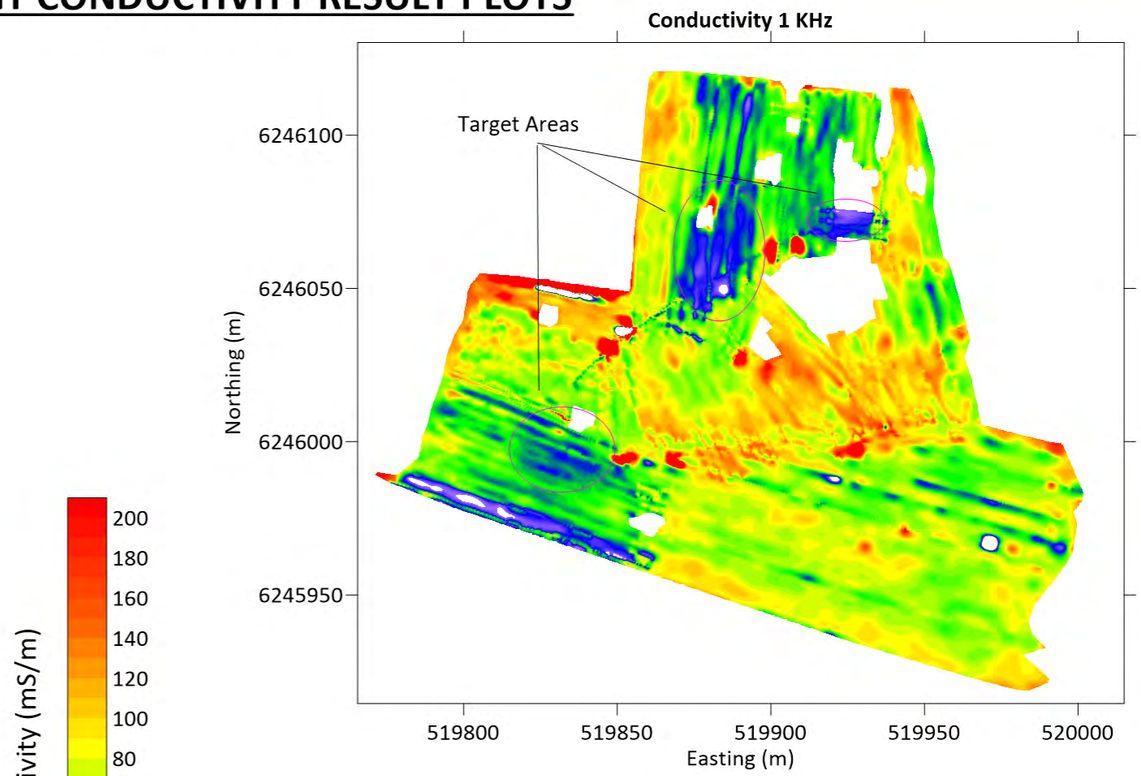
For and on behalf of GBG Group

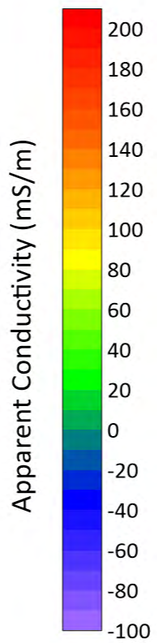
Jamie Speer (BSc Hons Geophysics and Analytical Geochemistry) Senior Geophysicist.

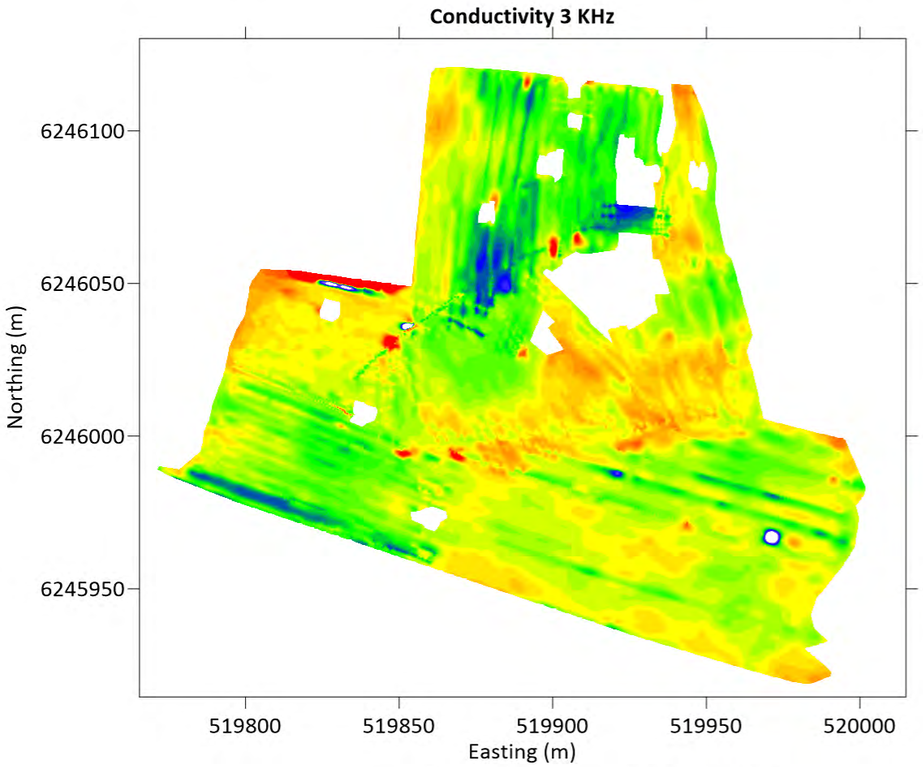
APPENDIX A. Drawings

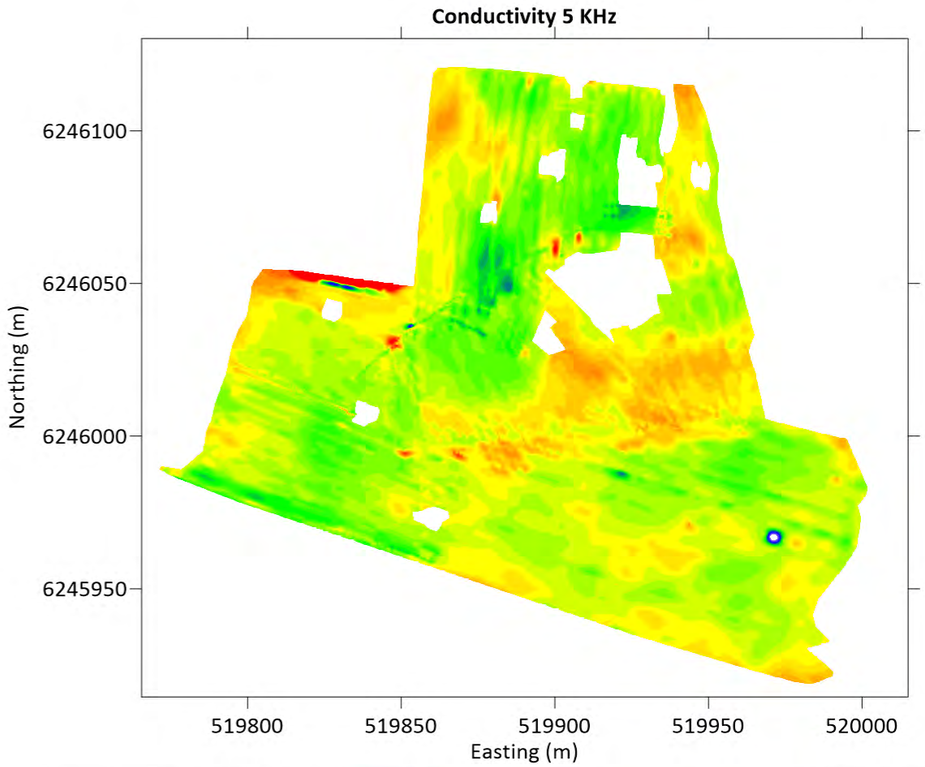
FDEM APPARENT CONDUCTIVITY RESULT PLOTS











NOTES:

CLIENT: XSTRACT GROUP		DATE: 7 APR 2021	DATUM: WGS84 UTM55H
TITLE: Geophysical Investigation to Locate Possible Mine Workings Within “Site One”, West Wyalong, NSW.		SCALE: 1:2000	DRAWN: BW & JS
		DRG No: GBGA2425-01	REV: DRAFT

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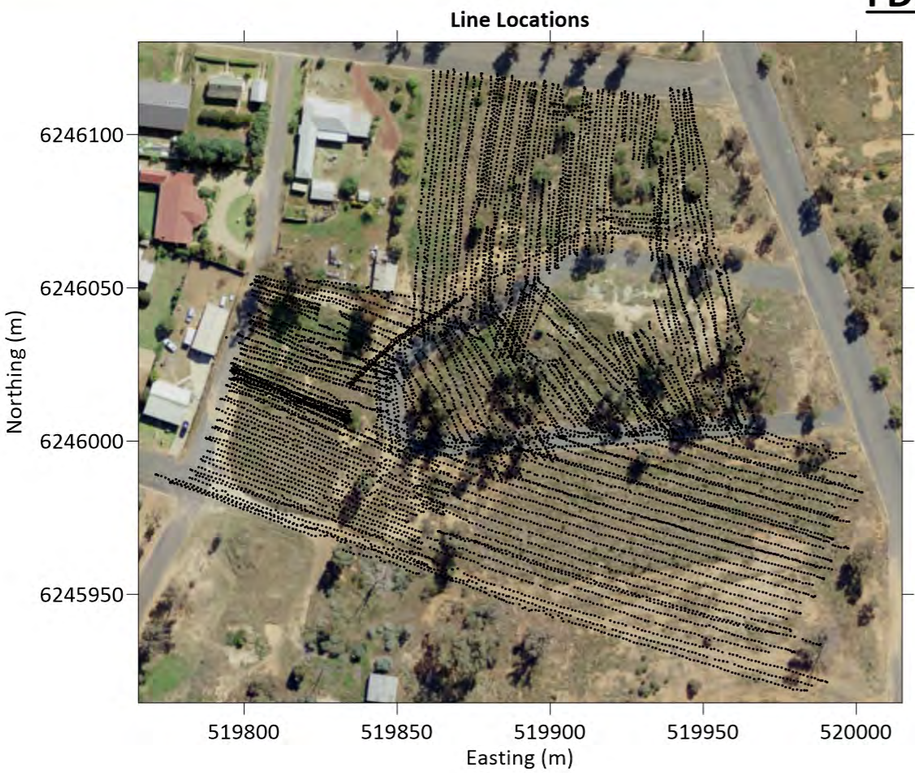
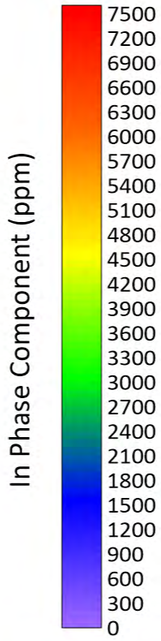
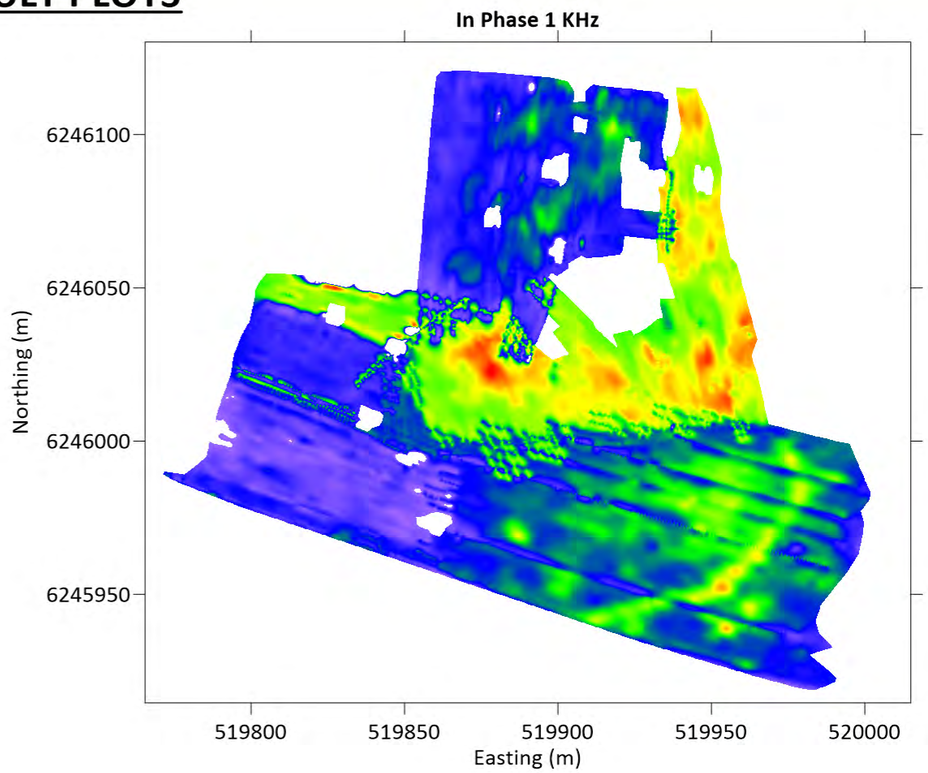
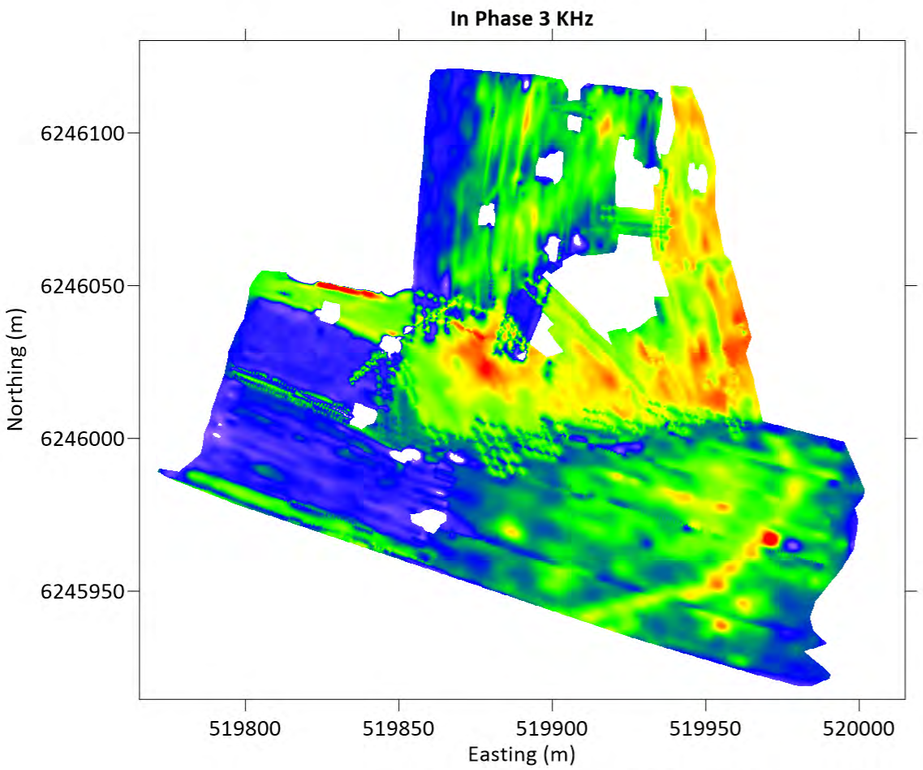
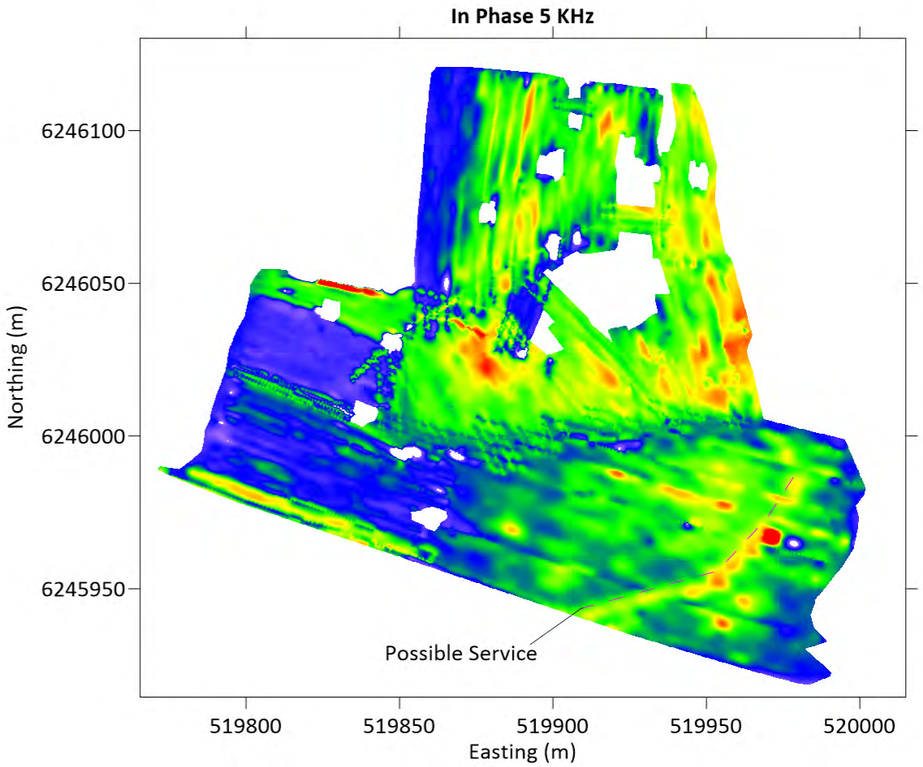
FDEM IN-PHASE RESULT PLOTS











NOTES:

CLIENT: XSTRACT GROUP		DATE: 7 APRIL 2021	DATUM: WGS84 UTM55H
TITLE: Geophysical Investigation to Locate Possible Mine Workings Within “Site One”, West Wyalong, NSW.		SCALE: 1:2000	DRAWN: BW & JS
		DRG No: GBGA2425-02	REV: DRAFT

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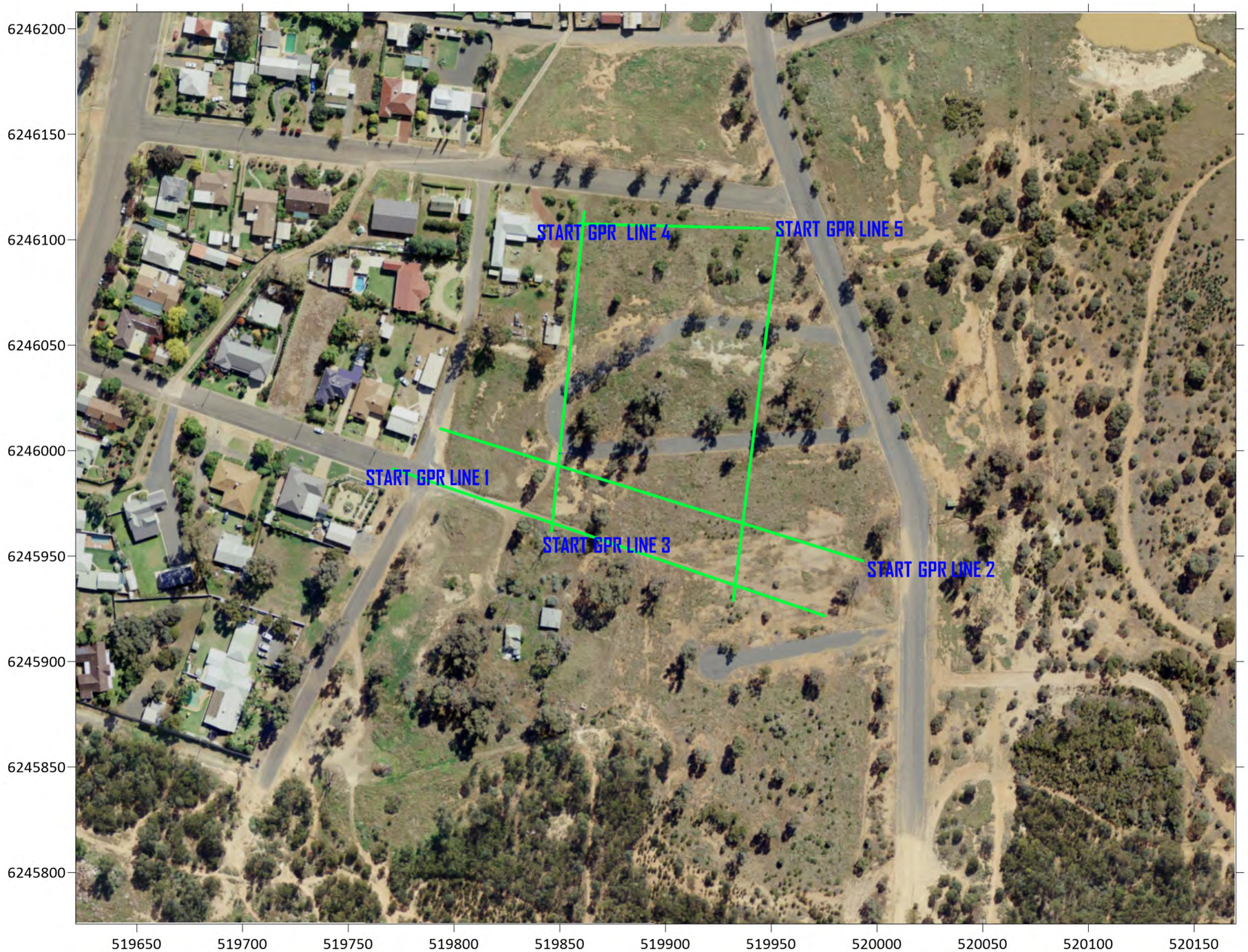
LOCATION OF COLLECTED GROUND PENETRATING RADAR PROFILES



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CLIENT: XSTRACT GROUP		DATE: 7 APRIL 2021	DATUM: WGS84 UTM55H
TITLE: Geophysical Investigation to Locate Possible Mine Workings Within "Site One", West Wyalong, NSW.		SCALE: 1:2000	DRAWN: BT & JS
		DRG No: GBGA2425_03	REV: DRAFT

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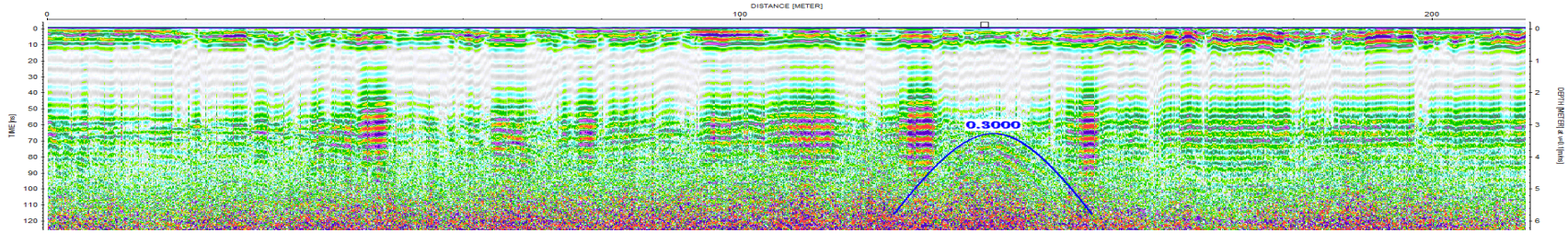
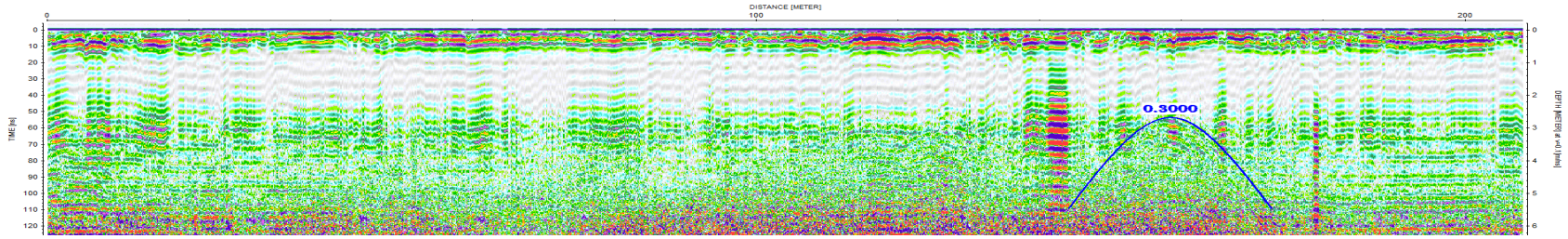
APPENDIX B. Images of Processed GPR Profiles

APPENDIX B. Images of Processed GPR Profiles



GPR File 1:



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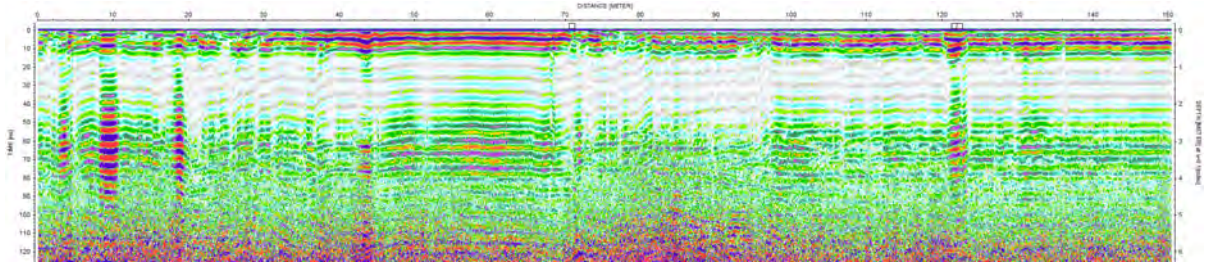

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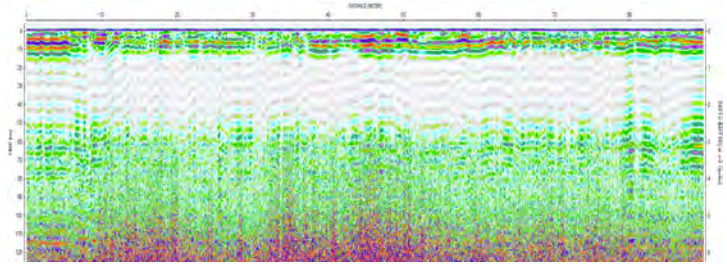

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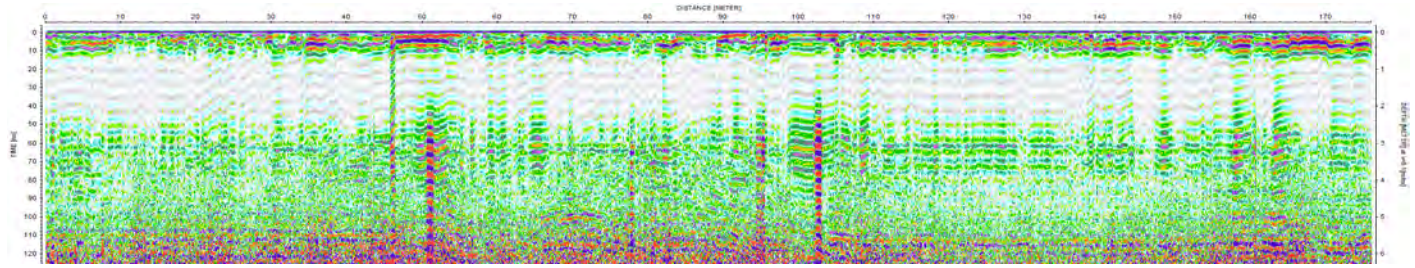

GPR File 5:

West Wyalong Mining Camp

Appendix C Laboratory Test Results

K&H GEOTECHNICAL SERVICES PTY LTD
K&H Geotechnical Services Pty Ltd
Corporate Laboratory Accreditation No: 5613

Parkes Laboratory
K & H Geotechnical Services Pty Ltd
ABN 115408476
2A East Street
Parkes NSW 2870

Phone: (02) 6862 5554

Report No: ASM:W21 /02347
Issue No: 1

Material Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

Accredited for compliance with ISO/IEC 17025 - Testing

NATA Accredited
Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Material Details

Source	Delivered	**Sampled From**	
Description	Silty Clay	**Location**	Evolution Mining - West Wyalong
Specification	Material Evaluation 3	**Sampling Method**	Sampled by Client

Sample Details

Sample ID	S21 / 00587	S21 / 00588	S21 / 00589	S21 / 00590
Field Sample ID	TP01	TP04	TP06	TP011
Date Sampled	24/02/2021	24/02/2021	24/02/2021	24/02/2021

Particle Size Distribution

Method: AS 1289.3.6.1
Description: Determination of the Particle Size Distribution of a Soil - Standard Method of Analysis by
Drying by:
Washed: Sample Washed

Sieve Size	% Passing				Limits
300mm					
150mm					
75.0mm					
63.0mm					
53.0mm				100	
37.5mm				95	
26.5mm				93	
19.0mm				90	
13.2mm				83	
9.5mm			100	80	
6.7mm	100	100	99	77	
4.75mm	99	99	96	75	
2.36mm	96	92	90	69	
1.18mm	86	73	76	57	
600µm	71	53	63	46	
425µm	66	47	58	42	
300µm	60	41	53	38	
150µm	45	32	42	31	
75µm	34	25	34	26	

Other Test Results

Description	Method	Results				Limits
Moisture Content (%)	AS 1289.2.1.1	12.0	19.4	15.9	2.1	
Sample History	AS 1289.1.1	Oven-dried	Oven-dried	Oven-dried	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	Dry Sieved	Dry Sieved	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	6.5	6.5	8.5	4.5	
Mould Length (mm)		254	254	254	253	
Crumbling		No	No	No	No	
Curling		No	No	No	No	
Cracking		No	No	No	No	
Liquid Limit (%)	AS 1289.3.1.2	31	42	40	38	
Plastic Limit (%)	AS 1289.3.2.1	11	29	22	29	
Plasticity Index (%)	AS 1289.3.3.1	20	13	18	9	

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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K&H Geotechnical Services Pty Ltd
Corporate Laboratory Accreditation No: 5613

Parkes Laboratory
K & H Geotechnical Services Pty Ltd
ABN 115408476
2A East Street
Parkes NSW 2870

Phone: (02) 6862 5554

Report No: ASM:W21 /02347
Issue No: 1

Material Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

Accredited for compliance with ISO/IEC 17025. - Testing

NATA Accredited
Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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Material Details

Source	Delivered	**Sampled From**	
Description	Silty Clay	**Location**	Evolution Mining - West Wyalong
Specification	Material Evaluation 3	**Sampling Method**	Sampled by Client

Sample Details

Sample ID	S21 / 00587	S21 / 00588	S21 / 00589	S21 / 00590
Field Sample ID	TP01	TP04	TP06	TP011
Date Sampled	24/02/2021	24/02/2021	24/02/2021	24/02/2021

Other Test Results

Description	Method	Results			Limits
Standard MDD (t/m³)	AS 1289.5.1.1	1.85		1.62	1.92
Standard OMC (%)		13.0		20.0	10.0
Retained Sieve (mm)		19		19	19
Oversize Material (%)		0		0	0
Curing Time (h)		2		27	3
LL Method		AS 1289.3.1.2		AS 1289.3.1.2	AS 1289.3.1.2
CBR at 2.5mm (%)	AS 1289.6.1.1	3.5		11	8
Dry Density before Soaking (t/m³)		1.81		1.58	1.89
Density Ratio before Soaking (%)		98.0		98.0	98.0
Moisture Content before Soaking (%)		13.3		19.6	9.9
Moisture Ratio before Soaking (%)		100.5		99.0	99.5
Dry Density after Soaking (t/m³)		1.80		1.58	1.88
Density Ratio after Soaking (%)		97.5		97.5	98.0
Swell (%)		0.5		0.0	0.0
Moisture Content of Top 30mm (%)		17.3		25.6	15.6
Moisture Content of Remaining Depth (%)		14.5		22.4	13.9
Compaction Hammer Used		Standard		Standard	Standard
Surcharge Mass (kg)		4.50		4.50	4.50
Period of Soaking (Days)		4		4	4
Retained on 19 mm Sieve (%)		0		0	0
CBR Moisture Content Method		AS 1289.2.1.1		AS 1289.2.1.1	AS 1289.2.1.1
Sample Curing Time (h)		51		3	100
Plasticity Method		AS 1289.3.1.2		AS 1289.3.1.2	AS 1289.3.1.2
Sample Moisture Content		AS 1289.2.1.1		AS 1289.2.1.1	AS 1289.2.1.1
Shrink Swell Index - Iss (%)	AS 1289.7.1.1	1.8	1.1	1.5	
Initial Swell Moisture Content (%)		12.8	22.9	18.9	
Final Swell Moisture Content (%)		14.5	26.7	27.2	
Shrinkage Moisture Content (%)		12.0	22.3	19.0	
Inert Inclusions (%)		4.9	9.7	4.8	
Extent of Soil Crumbling		Nil	Nil	Nil	
Extent of Soil Cracking		Minor	Minor	Minor	
Borehole Number		TP01	TP04	TP06	
Borehole Depth (m)					

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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Report No: MAT:S21 / 00587
Issue No: 1

Material Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

Accredited for compliance with ISO/IEC 17025. - Testing

NATA Accredited
Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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Sample Details

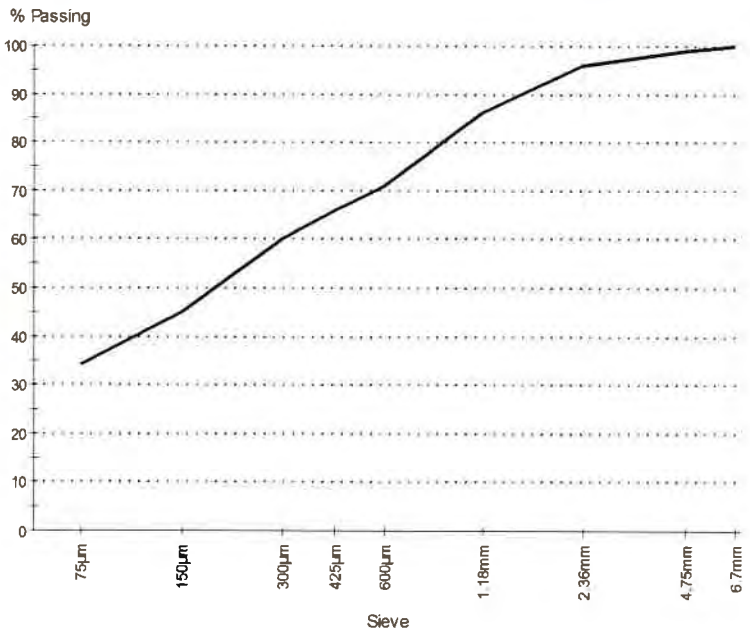
Sample ID:	S21 / 00587
Field Sample:	TP01
Date Sampled:	24/02/2021
Source:	Delivered
Material:	Silty Clay
Specification:	Material Evaluation 3
Sampling Method:	Sampled by Client

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	12.0	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	6.5	
Mould Length (mm)		254	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	31	
Plastic Limit (%)	AS 1289.3.2.1	11	
Plasticity Index (%)	AS 1289.3.3.1	20	

Particle Size Distribution

Method: AS 1289.3.6.1



Note: Sample Washed

Sieve Size	% Passing	Limits
6.7mm	100	
4.75mm	99	
2.36mm	96	
1.18mm	86	
600µm	71	
425µm	66	
300µm	60	
150µm	45	
75µm	34	

Comments

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Testing Completed - 11/03/2021

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Material Test Report

Report No: MAT:S21 / 00587
Issue No: 1

Client: 0475869480
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Project: Material Evaluation

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NATA Accredited Site No: 5606

Approved Signatory: Eddie Mead (Laboratory Manager)
Date of Issue: 12/03/2021

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Other Test Results

Description	Method	Result	Limits
Standard MDD (t/m³)	AS 1289.5.1.1	**1.85**	
Standard OMC (%)		**13.0**	
Retained Sieve (mm)		19	
Oversize Material (%)		0	
Curing Time (h)		2	
LL Method		AS 1289.3.1.2	
CBR at 2.5mm (%)	AS 1289.6.1.1	**3.5**	
Dry Density before Soaking (t/m³)		1.81	
Density Ratio before Soaking (%)		98.0	
Moisture Content before Soaking (%)		13.3	
Moisture Ratio before Soaking (%)		100.5	
Dry Density after Soaking (t/m³)		1.80	
Density Ratio after Soaking (%)		97.5	
Swell (%)		0.5	
Moisture Content of Top 30mm (%)		17.3	
Moisture Content of Remaining Depth (%)		14.5	
Compaction Hammer Used		Standard	
Surcharge Mass (kg)		4.50	
Period of Soaking (Days)		4	
Retained on 19 mm Sieve (%)		0	
CBR Moisture Content Method		AS 1289.2.1.1	
Sample Curing Time (h)		51	
Plasticity Method		AS 1289.3.1.2	
Sample Moisture Content		AS 1289.2.1.1	
Shrink Swell Index - Iss (%)	AS 1289.7.1.1	**1.8**	
Initial Swell Moisture Content (%)		12.8	
Final Swell Moisture Content (%)		14.5	
Shrinkage Moisture Content (%)		12.0	
Inert Inclusions (%)		4.9	
Extent of Soil Crumbling		Nil	
Extent of Soil Cracking		Minor	
Borehole Number		TP01	
Borehole Depth (m)		N/A	

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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Report No: CBR:S21 / 00587
Issue No: 1

California Bearing Ratio Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

Accredited for compliance with ISO/IEC 17025. - Testing

NATA Accredited Site No: 5606

Approved Signatory: Eddie Mead (Laboratory Manager)
Date of Issue: 12/03/2021

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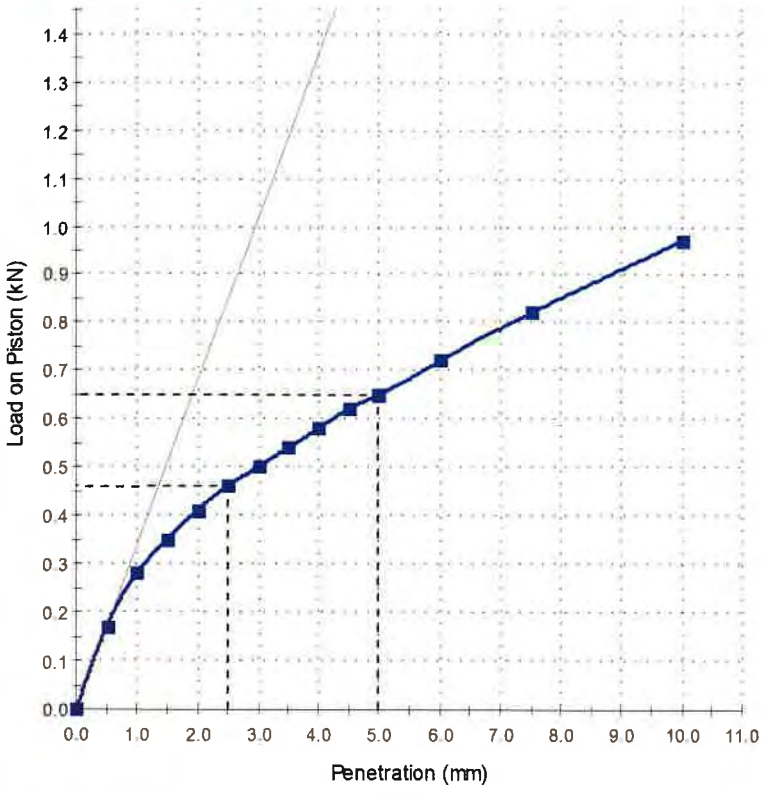
Sample Details

Sample ID:	S21 / 00587	**Date Sampled:**	24/02/2021
Sampled By:	CLIENT		
Sampling Method:	Sampled by Client		
Source:	Delivered	**Material:**	Silty Clay
Specification:	Material Evaluation 3	**Location:**	TP01
Tested By:	Simon Richards	**Date Tested:**	10/03/2021

Load vs Penetration



Test Results

	AS 1289.6.1.1
CBR at 2.5mm (%):	**3.5**
Dry Density before Soaking (t/m³):	1.81
Density Ratio before Soaking (%):	98.0
Moisture Content before Soaking (%):	13.3
Moisture Ratio before Soaking (%):	100.5
Dry Density after Soaking (t/m³):	1.80
Density Ratio after Soaking (%):	97.5
Swell (%):	0.5
Moisture Content of Top 30mm (%):	17.3
Moisture Content of Remaining Depth (%):	14.5
Compaction Hammer Used:	Standard
	AS 1289.5.1.1
Surcharge Mass (kg):	4.50
Period of Soaking (Days):	4
Retained on 19 mm Sieve (%):	0
CBR Moisture Content Method:	AS 1289.2.1.1
Sample Curing Time (h):	51
Plasticity Determination Method:	AS 1289.3.1.2
——— AS 1289.2.1.1 ———	
Bulk (Lab) Moisture Content (%):	12.0

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
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Report No: MAT:S21 / 00588
Issue No: 1

Material Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

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Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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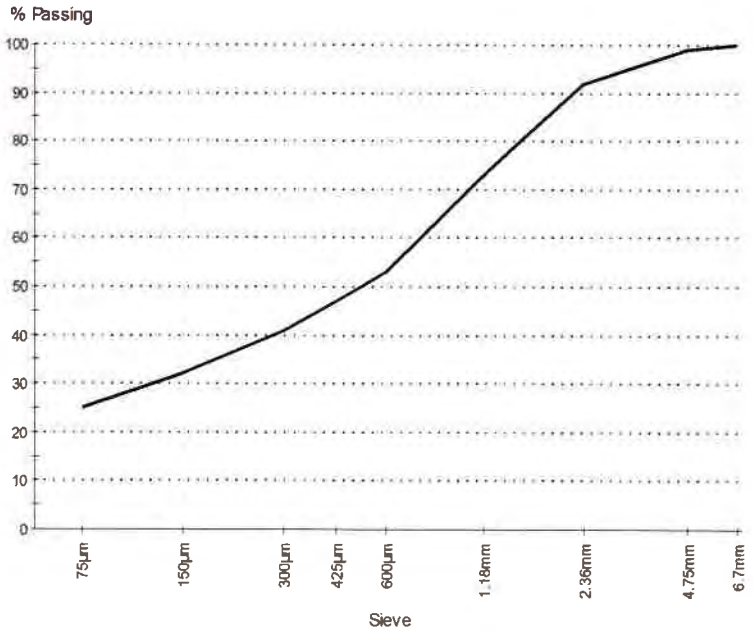
Sample Details

Sample ID:	S21 / 00588
Field Sample:	TP04
Date Sampled:	24/02/2021
Source:	Delivered
Material:	Silty Clay
Specification:	Material Evaluation 3
Sampling Method:	Sampled by Client

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	19.4	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	6.5	
Mould Length (mm)		254	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	42	
Plastic Limit (%)	AS 1289.3.2.1	29	
Plasticity Index (%)	AS 1289.3.3.1	13	

Particle Size Distribution



Method: AS 1289.3.6.1
Drying by: Oven

Note: Sample Washed

Sieve Size	% Passing	Limits
6.7mm	100	
4.75mm	99	
2.36mm	92	
1.18mm	73	
600µm	53	
425µm	47	
300µm	41	
150µm	32	
75µm	25	

Comments

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Testing Commenced - 24/02/2021
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Report No: MAT:S21 / 00588
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Material Test Report

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Calibre Group
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NATA Accredited Site No: 5606

Approved Signatory: Eddie Mead (Laboratory Manager)
Date of Issue: 12/03/2021

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Other Test Results

Description	Method	Result	Limits
Shrink Swell Index - Iss (%)	AS 1289.7.1.1	**1.1**	
Initial Swell Moisture Content (%)		22.9	
Final Swell Moisture Content (%)		26.7	
Shrinkage Moisture Content (%)		22.3	
Inert Inclusions (%)		9.7	
Extent of Soil Crumbling		Nil	
Extent of Soil Cracking		Minor	
Borehole Number		TP04	
Borehole Depth (m)		N/A	

Comments

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Report No: MAT:S21 / 00589
Issue No: 1

Material Test Report

Client: 0475869480
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Level 13 , 54 Miller Street
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Project: Material Evaluation

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Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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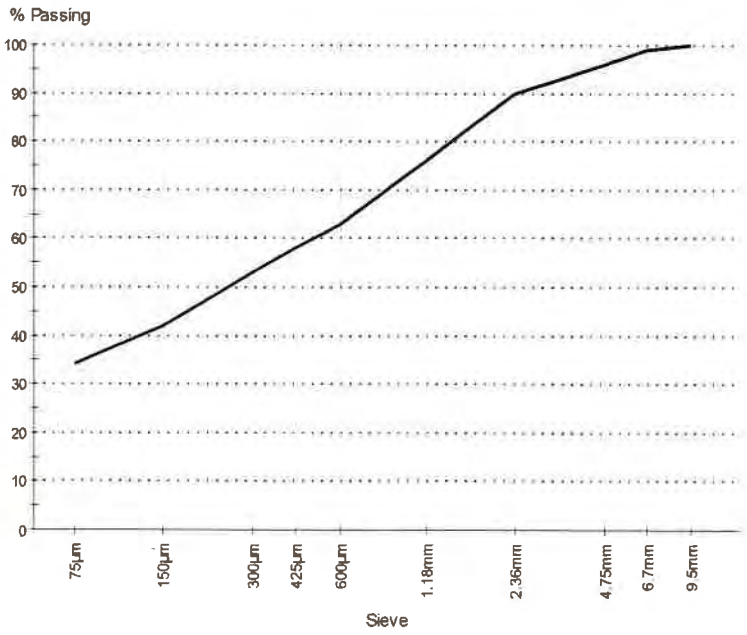
Sample Details

Sample ID:	S21 / 00589
Field Sample:	TP06
Date Sampled:	24/02/2021
Source:	Delivered
Material:	Silty Clay
Specification:	Material Evaluation 3
Sampling Method:	Sampled by Client

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	15.9	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	8.5	
Mould Length (mm)		254	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	40	
Plastic Limit (%)	AS 1289.3.2.1	22	
Plasticity Index (%)	AS 1289.3.3.1	18	

Particle Size Distribution



Method: AS 1289.3.6.1
Drying by: Oven

Note: Sample Washed

Sieve Size	% Passing	Limits
9.5mm	100	
6.7mm	99	
4.75mm	96	
2.36mm	90	
1.18mm	76	
600µm	63	
425µm	58	
300µm	53	
150µm	42	
75µm	34	

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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Report No: MAT:S21 / 00589
Issue No: 1

Material Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

NATA TECHNICAL COMPETENCE
NATA Accredited Site No: 5606

Accredited for compliance with ISO/IEC 17025. - Testing

Approved Signatory: Eddie Mead (Laboratory Manager)
Date of Issue: 12/03/2021

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Other Test Results

Description	Method	Result	Limits
Standard MDD (t/m³)	AS 1289.5.1.1	**1.62**	
Standard OMC (%)		**20.0**	
Retained Sieve (mm)		19	
Oversize Material (%)		0	
Curing Time (h)		27	
LL Method		AS 1289.3.1.2	
CBR at 2.5mm (%)	AS 1289.6.1.1	**11**	
Dry Density before Soaking (t/m³)		1.58	
Density Ratio before Soaking (%)		98.0	
Moisture Content before Soaking (%)		19.6	
Moisture Ratio before Soaking (%)		99.0	
Dry Density after Soaking (t/m³)		1.58	
Density Ratio after Soaking (%)		97.5	
Swell (%)		0.0	
Moisture Content of Top 30mm (%)		25.6	
Moisture Content of Remaining Depth (%)		22.4	
Compaction Hammer Used		Standard	
Surcharge Mass (kg)		4.50	
Period of Soaking (Days)		4	
Retained on 19 mm Sieve (%)		0	
CBR Moisture Content Method		AS 1289.2.1.1	
Sample Curing Time (h)		3	
Plasticity Method		AS 1289.3.1.2	
Sample Moisture Content		AS 1289.2.1.1	
Shrink Swell Index - Iss (%)	AS 1289.7.1.1	**1.5**	
Initial Swell Moisture Content (%)		18.9	
Final Swell Moisture Content (%)		27.2	
Shrinkage Moisture Content (%)		19.0	
Inert Inclusions (%)		4.8	
Extent of Soil Crumbling		Nil	
Extent of Soil Cracking		Minor	
Borehole Number		TP06	
Borehole Depth (m)		N/A	

Comments

The results apply to samples as received.
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Report No: CBR:S21 / 00589
Issue No: 1

California Bearing Ratio Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

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NATA Accredited
Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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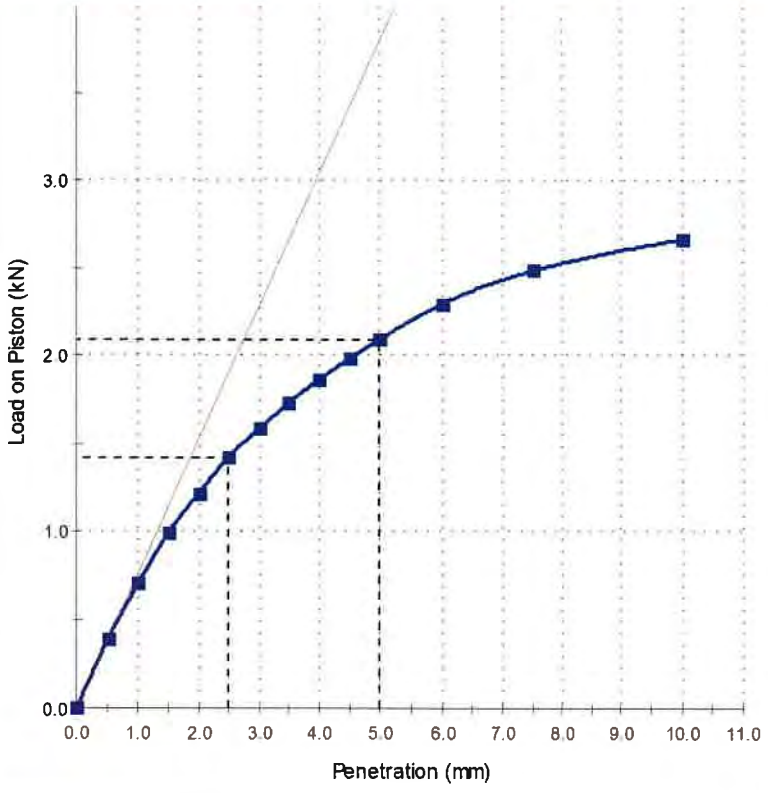
Sample Details

Sample ID:	S21 / 00589	**Date Sampled:**	24/02/2021
Sampled By:	CLIENT		
Sampling Method:	Sampled by Client		
Source:	Delivered	**Material:**	Silty Clay
Specification:	Material Evaluation 3	**Location:**	TP06
Tested By:	Liam Cassidy	**Date Tested:**	10/03/2021

Load vs Penetration



Test Results

	AS 1289.6.1.1
CBR at 2.5mm (%):	**11**
Dry Density before Soaking (t/m³):	1.58
Density Ratio before Soaking (%):	98.0
Moisture Content before Soaking (%):	19.6
Moisture Ratio before Soaking (%):	99.0
Dry Density after Soaking (t/m³):	1.58
Density Ratio after Soaking (%):	97.5
Swell (%):	0.0
Moisture Content of Top 30mm (%):	25.6
Moisture Content of Remaining Depth (%):	22.4
Compaction Hammer Used:	Standard
	AS 1289.5.1.1
Surcharge Mass (kg):	4.50
Period of Soaking (Days):	4
Retained on 19 mm Sieve (%):	0
CBR Moisture Content Method:	AS 1289.2.1.1
Sample Curing Time (h):	3
Plasticity Determination Method:	AS 1289.3.1.2
——— AS 1289.2.1.1 ———	
Bulk (Lab) Moisture Content (%):	15.9

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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Report No: MAT:S21 / 00590
Issue No: 1

Material Test Report

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North Sydney nsw 2060

Project: Material Evaluation

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NATA Accredited
Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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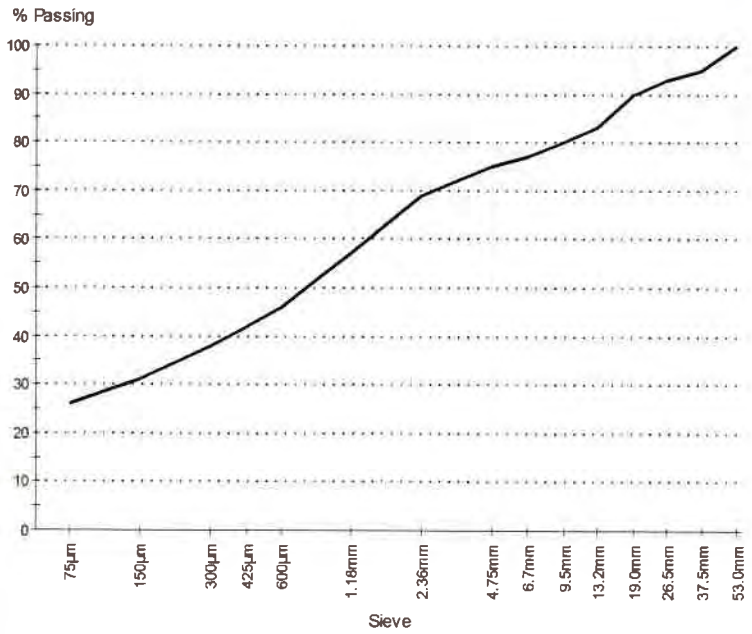
Sample Details

Sample ID:	S21 / 00590
Field Sample:	TP011
Date Sampled:	24/02/2021
Source:	Delivered
Material:	Silty Clay
Specification:	Material Evaluation 3
Sampling Method:	Sampled by Client

Other Test Results

Description	Method	Result	Limits
Moisture Content (%)	AS 1289.2.1.1	2.1	
Sample History	AS 1289.1.1	Oven-dried	
Preparation	AS 1289.1.1	Dry Sieved	
Linear Shrinkage (%)	AS 1289.3.4.1	4.5	
Mould Length (mm)		253	
Crumbling		No	
Curling		No	
Cracking		No	
Liquid Limit (%)	AS 1289.3.1.2	38	
Plastic Limit (%)	AS 1289.3.2.1	29	
Plasticity Index (%)	AS 1289.3.3.1	9	

Particle Size Distribution



Method: AS 1289.3.6.1
Drying by: Oven

Note: Sample Washed

Sieve Size	% Passing	Limits
53.0mm	100	
37.5mm	95	
26.5mm	93	
19.0mm	90	
13.2mm	83	
9.5mm	80	
6.7mm	77	
4.75mm	75	
2.36mm	69	
1.18mm	57	
600µm	46	
425µm	42	
300µm	38	
150µm	31	
75µm	26	

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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K&H GEOTECHNICAL SERVICES PTY LTD
K&H Geotechnical Services Pty Ltd
Corporate Laboratory Accreditation No: 5613

Parkes Laboratory
K & H Geotechnical Services Pty Ltd
ABN 115408476
2A East Street
Parkes NSW 2870

Phone: (02) 6862 5554

Report No: MAT:S21 / 00590
Issue No: 1

Material Test Report

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

Accredited for compliance with ISO/IEC 17025. - Testing

NATA Accredited Site No: 5606

Approved Signatory: Eddie Mead (Laboratory Manager)
Date of Issue: 12/03/2021

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Other Test Results

Description	Method	Result	Limits
Standard MDD (t/m³)	AS 1289.5.1.1	**1.92**	
Standard OMC (%)		**10.0**	
Retained Sieve (mm)		19	
Oversize Material (%)		0	
Curing Time (h)		3	
LL Method		AS 1289.3.1.2	
CBR at 5.0mm (%)	AS 1289.6.1.1	**8**	
Dry Density before Soaking (t/m³)		1.89	
Density Ratio before Soaking (%)		98.0	
Moisture Content before Soaking (%)		9.9	
Moisture Ratio before Soaking (%)		99.5	
Dry Density after Soaking (t/m³)		1.88	
Density Ratio after Soaking (%)		98.0	
Swell (%)		0.0	
Moisture Content of Top 30mm (%)		15.6	
Moisture Content of Remaining Depth (%)		13.9	
Compaction Hammer Used		Standard	
Surcharge Mass (kg)		4.50	
Period of Soaking (Days)		4	
Retained on 19 mm Sieve (%)		0	
CBR Moisture Content Method		AS 1289.2.1.1	
Sample Curing Time (h)		100	
Plasticity Method		AS 1289.3.1.2	
Sample Moisture Content		AS 1289.2.1.1	

Comments

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Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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2A East Street
Parkes NSW 2870

Phone: (02) 6862 5554

California Bearing Ratio Test Report

Report No: CBR:S21 / 00590
Issue No: 1

Client: 0475869480
Calibre Group
Level 13 , 54 Miller Street
North Sydney nsw 2060

Project: Material Evaluation

Accredited for compliance with ISO/IEC 17025. - Testing

NATA Accredited
Site No: 5606

Approved Signatory: Eddie Mead
(Laboratory Manager)
Date of Issue: 12/03/2021

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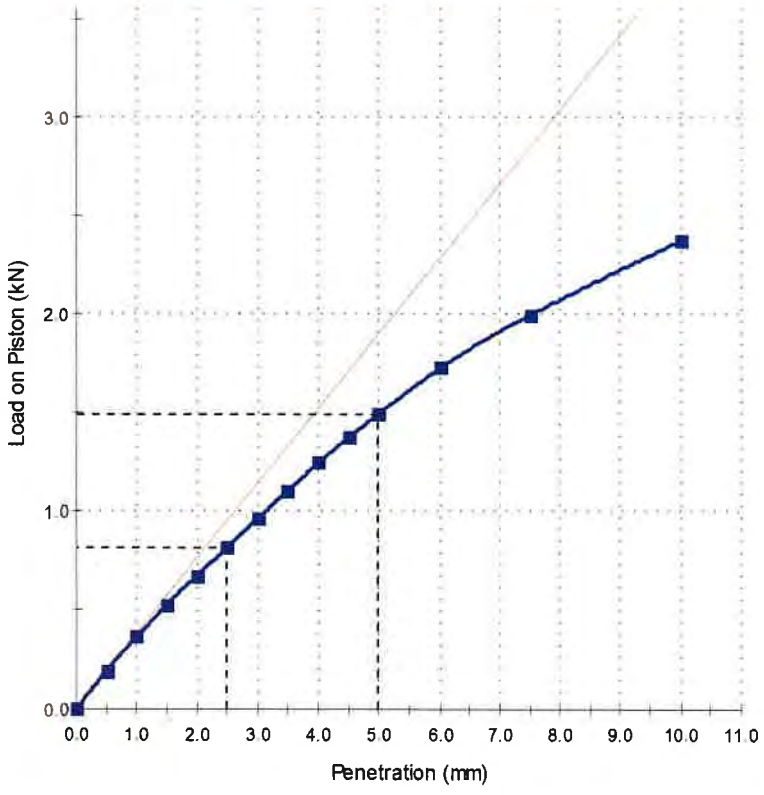
Sample Details

Sample ID:	S21 / 00590	**Date Sampled:**	24/02/2021
Sampled By:	CLIENT		
Sampling Method:	Sampled by Client		
Source:	Delivered	**Material:**	Silty Clay
Specification:	Material Evaluation 3	**Location:**	TP011
Tested By:	Liam Cassidy	**Date Tested:**	10/03/2021

Load vs Penetration



Test Results

	AS 1289.6.1.1
CBR at 5.0mm (%):	**8**
Dry Density before Soaking (t/m³):	1.89
Density Ratio before Soaking (%):	98.0
Moisture Content before Soaking (%):	9.9
Moisture Ratio before Soaking (%):	99.5
Dry Density after Soaking (t/m³):	1.88
Density Ratio after Soaking (%):	98.0
Swell (%):	0.0
Moisture Content of Top 30mm (%):	15.6
Moisture Content of Remaining Depth (%):	13.9
Compaction Hammer Used:	Standard
	AS 1289.5.1.1
Surcharge Mass (kg):	4.50
Period of Soaking (Days):	4
Retained on 19 mm Sieve (%):	0
CBR Moisture Content Method:	AS 1289.2.1.1
Sample Curing Time (h):	100
Plasticity Determination Method:	AS 1289.3.1.2
——— AS 1289.2.1.1 ———	
Bulk (Lab) Moisture Content (%):	2.1

Comments

The results apply to samples as received.
Testing Commenced - 24/02/2021
Testing Completed - 11/03/2021

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ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2107804**	Page	: 1 of 2
Client	: **K&H Geotechnical Services PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Eddy Mead	Contact	: Customer Services ES
Address	: PO Box 75 Parkes 2870	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 68625554	Telephone	: +61-2-8784 8555
Project	: Calibre Group- Material Evaluation - W21/02347	Date Samples Received	: 05-Mar-2021 08:30
Order number	: ----	Date Analysis Commenced	: 11-Mar-2021
C-O-C number	: ----	Issue Date	: 15-Mar-2021 10:54
Sampler	: ----		
Site	: ----		
Quote number	: SYBQ/542/17		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

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

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

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

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

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

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

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

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

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

- ED045G: LOR raised for Chloride on sample 1 due to sample matrix.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01 (S21/00587)	TP04 (S21/00588)	TP06 (S21/00589)	TP11 (S21/00590)	----
			Sampling date / time	04-Mar-2021 00:00	04-Mar-2021 00:00	04-Mar-2021 00:00	04-Mar-2021 00:00	----
Compound	CAS Number	LOR	Unit	ES2107804-001	ES2107804-002	ES2107804-003	ES2107804-004	--------
				Result	Result	Result	Result	----
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	**7.7**	**8.4**	**6.6**	**9.1**	**----**
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	**389**	**449**	**733**	**517**	**----**
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**10.2**	**10.6**	**12.8**	**1.6**	**----**
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	**140**	**60**	**160**	**120**	**----**
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	<500	**580**	**1010**	**560**	**----**

Contact Us

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Appendix P

Bland Shire DCP Compliance

EMM
creating opportunities

Evolution
MINING

Assessment on whether the proposal is in accordance with the Bland Shire DCP

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
Chapter 4 – Dual occupancy and multi-dwelling residential development					
All residential zones					
PMD1	Development respects the character of the neighbourhood by:	AMD1	Character of the Neighbourhood	NA	NA
PMD1.1	Being respectful of, without necessarily imitating the style and character of adjoining houses and gardens including the scale, materials, roof forms and types of trees.	AMD1.1	Design cues are drawn from surrounding dwellings, including window forms, external facade treatments and roof materials and pitches that are common within the neighbourhood.	All buildings at the site will be single storey. The modules near Hyde Lane and Cedar Street will have pitched roofs to reflect the architecture and style of the existing residential dwellings. The roofs will consist of grey metal deck made from Colorbond® (or similar) sheeting.	Compliant
PMD1.2	Providing attractive streetscapes, comprising trees, gardens, building facades, fences and walls.	AMD1.2.1	Landscaping is provided to the street frontage, which includes canopy trees, shrubs and grass.	Landcaping plans show that the site will be integrated floristically into the neighbourhood and include native species in planted areas where possible. Existing vegetation on-site has been maintained where possible. Additional landscaping will include vegetation to act as suitable street frontage on Boundary Street in addition to the planting of shade trees to act as heat mitigation for the accommodation modules, amenity buildings and outdoor eating areas.	Compliant
		AMD1.2.2	Gables over garages facing streets are avoided. Note: Dutch gables are considered satisfactory.	There is no gable type roofing proposed.	NA
		AMD1.2.3	Residential dwellings avoid fibrous cement (unless painted) and metal cladding of walls (unless as an architectural feature).	Each accommodation module will be prefabricated and made from durable and non-flammable materials. Where fibrous cement is used it will be painted. The external metal cladding will be architecturally consistent with nearby residences and constructed from Colorbond® (or similar) sheeting in earthy matt colours.	Compliant

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
		AMD1.2.4	Fencing forward of the front building setback is in a material which is respectful of neighbourhood character, and does not exceed a height of 1.2 metres.	A 1.8 m - 'good neighbour' style fence - will be installed around a portion of the western site boundary to provide a secure and private barrier between the accommodation village and the residence at 14 Hyde Street. The remainder of the western site boundary along Hyde Lane and Alleena Street and the southern site boundary will be 1.2 m high chain wire fencing (Cyclone or similar). The northern site boundary along Hyde Street and the eastern site boundary along Boundary Street (also considered the front of the site) will be 1.2 m high chain wire fencing (Cyclone or similar)	Compliant
		AMD1.2.5	Driveways to rear dwellings are not fenced forward of the front building setback.	There will be separate singular entry and exit driveways. Modules will not have induvial driveways.	Compliant
PMD1.3	Preserving established trees and gardens.	AMD1.3	Existing canopy trees are protected where possible in accordance with the Chapter 12 Tree Removal or Lopping.	Natural vegetation will be undisturbed where practicable to provide natural landscaping.	Compliant
PMD2	Development takes advantage of the attributes of the site, by:	AMD2	NA	NA	NA
PMD2.1	Using its slope, its orientation to the sun, and its established landscape quality to create useable outdoor spaces and views.	AMD2.1	Private open space is provided foreach dwelling at a minimum rate of 48m^2 per dwelling, which is able to contain a rectangle of 8 metres x 4 metres and which has a minimum useable width of 3 metres.	The site will consist of individual accommodation modules and common buildings surrounded by a large areas of open private space. These areas will be used for outdoor dining and recreation	Compliant
PMD2.2	Combining neighbourhood gardens to maintain the landscape character of the area.	AMD2.2	Landscaped areas for each unit shall be combined to have an aggregate garden as opposed to small minimalist efforts.	Site will consist of individual modules and common buildings with collective landscaping, communal gardens, and open space across the site.	Compliant
PMD2.3	Minimising paved areas.	AMD2.3.1	Permeable areas of the site are at least 20% of the site.	More than 20% of the site will consist of permeable areas.	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
		AMD2.3.2	A maximum of 30% of the area forward of the front building setback is occupied by paving, access driveways or the like.	The front buildings include the common buildings. The entry and exit driveways are located forward of these buildings on Boundary Street and do not exceed 30% of the land forward of the front buildings.	Compliant
PMD2.4	Keeping the floor area of the new building to a minimum through efficient planning so as to retain as much of the existing backyard and garden as possible and to minimise site coverage and maximise setbacks from the boundaries.	AMD2.4	Site coverage (gross building area) does not exceed 60% of the site.	Gross building area will not exceed 60% of the site.	Compliant
PMD2.5	Ensuring setbacks from the street alignment do not vary dramatically from those in the rest of the street.	AMD2.5	Building walls are set back: At least 5 metres from the primary street frontage and at least 3 metres from any secondary street frontage. Two storey buildings have the upper level set back from side or rear boundaries by 3 metres, plus 0.3 metres for every metre of height over 3.6 metres up to 6.9 metres, plus 1 metre for every metre of height over 6.9 metres.	Setbacks will include: • 5 m setback on the eastern boundary with Boundary Street (primary street); • 3 m setback on the western boundary with Cedar Street and northern boundary with Hyde Street (secondary streets); and • 11 m setback on the southern boundary of the site to allow for an asset protection zone.	Compliant
PMD3	Development is of appropriate building height, bulk and form by:	-	-	-	-
PMD3.1	Being respectful of the predominant surrounding building forms, roof forms and building heights.	-	None provided	All buildings on-site will be single storey. Modules nearest Hyde Lane and Cedar Street will have pitched roofs to reflect the architecture and style of existing residential dwellings. The roofs will consist of grey metal deck made from Colorbond® (or similar) sheeting.	Compliant

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PMD3.2	Minimising building bulk and height on or near boundaries to avoid overshadowing and overlooking of neighbours.	AMD3.2.1	Buildings are restricted to a maximum of two storeys above natural ground level at any point, or 8 metres whichever is the lesser. Note: 8 m is to be measured from natural ground level to the highest structural point of the building, not including antennae, spires etc)	All buildings on-site will be single storey and constructed to a height less than 8 m above natural ground level.	Compliant
		AMD3.2.3	Dwellings do not overlook the private open space area of an adjoining dwelling (either within or adjacent to the development), by use of techniques such as building setbacks, windows 1.7 m above finished floor level, opaque glass, screens, landscaping and the like.	Buildings will not overlook the private open space of the nearest residential dwellings. The buildings will be single storey and at least 3 m from nearby residential dwellings on Hyde Lane.	Compliant
		AMD3.2.3	Windows of developments are not directly facing windows of other development, unless: Separated by a distance of at least 2 m, Obliquely offset by at least 45°, provided with screening, are opaque, or are above 1.7 m in height above the finished floor level.	Buildings are separated by a distance of at least 3 m from nearby residential dwellings on Hyde Lane. Additionally, a solid 'good neighbour' style fence (Colorbond® or similar) will be used where the site adjoins neighbouring properties.	Compliant
		AMD3.2.4	Dwellings do not overlook the private open space area of an adjoining dwelling (either within or adjacent to the development), by use of techniques such as windows 1.7 metres above finished floor level, opaque glass, screens, landscaping and the like.	Dwellings will not overlook the private open space of an adjoining dwelling. A 'good neighbour' style fence (Colorbond® or similar) will be used where the site adjoins neighbouring properties.	Compliant
PMD4	Development protects the heritage qualities of the area by:	-	-	-	-
PMD4.1	Respecting existing heritage buildings, streetscapes or gardens close to the development.	AMD4.1	The development complies with the Chapter 10 – Heritage Conservation of this DCP.	No heritage buildings, streetscapes or gardens are located within vicinity of the site.	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PMD5	Development provides good environmental performance access by:	-	-	-	-
PMD5.1	Providing good sunlight to living areas and avoiding overshadowing of neighbours and established garden areas.	AMD5.1.1	At least 50% of the minimum required secluded open space of a dwelling within or adjoining the development has sunlight between the hours of 9.00 am and 3.00 pm on 21 June.	Each module and amenity building will have at least one window which is 1 m by 1.2 m. The dining hall will have several large windows. Therefore, adequate sunlight will be provided during the day.	Compliant
		AMD5.1.2	Habitable room windows have at least 1.8 m separation from the wall of an adjoining building. Note: Council will require shadow diagrams to illustrate the extent of overshadowing of neighbours for all two storey development, and for single storey development that is both upslope and in the direction of the sun from existing residential development.	The placement of the accommodation modules will avoid overshadowing of neighbours and established garden areas.	Compliant
PMD5.3	Planning the internal layout of a dwelling to ensure good daylight to living areas.	AMD5.3	High occupancy rooms utilised during daylight hours should have a northern aspect, where possible.	The common buildings can be considered high occupy rooms, which have a northern facing aspect.	Compliant
PMD5.4	Locating parking in the shadow of the buildings.	AMD5.4	Vehicular parking should not be on the north side of a dwelling's high occupancy rooms (daylight hours).	Vehicle parking will be located at least 10 m from occupied rooms.	Compliant
PMD6	Development creates clear address and access by:	-	-	-	-
PMD6.1	Ensuring dwellings adjoining the street frontage address the street.	AMD6.1	Dwellings adjoining a street frontage address a street frontage of the development. Note: this means front doors and windows to habitable rooms are part of the front facade of the dwelling. Direct access to parking for front dwelling(s) can also be considered.	No dwellings will adjoin the street frontage.	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PMD6.2	Providing each dwelling with clear and distinct access, preferably visible from a public street.	AMD6.2	The development shall be designed such that public access to all occupancies is readily discernible from the front driveway access.	A network of pathways will connect common buildings, communal facilities, car parking areas, accommodation modules and the bus pull-in bay.	Compliant
PMD7	Development provides access and parking by:	-	-	-	-
PMD7.1	Providing adequate parking for the number and type of dwellings.	AMD7.1.1	Parking is provided at a rate in accordance with Chapter 11 – Car Parking and Vehicle Access of this DCP and is sealed with bitumen, concrete (preferably coloured) and textured or pavers.	All parking construction and design will be compliant with Australian Standard AS2890 Part 1 and 2. In accordance with *Table 11.5 – Number of Car Parking Spaces Required* from the DCP, multi-dwellings residential developments require the following 'Rate of Provision': • one bedroom dwelling: 1 space (undercover) per dwelling; • dwellings containing two or more bedrooms: one additional space per dwelling (may be covered or uncovered); and • visitor parking: one space per three dwellings or part thereof (may be uncovered). The project will not meet these requirements, however as most staff are proposed to use a company provided bus for travel to and from site on a roster basis, it is considered that this alternative achieves the objects of the DCP. As stated in the DCP, BSC is aware that full compliance with all acceptable solutions with respect to car parking and vehicle access may not be possible. In this respect, where an acceptable solution is not achieved, an alternative design should be presented in accordance with the clause 1.0.7 of the DCP.	Unlikely to comply (refer comments on PNC1 below). Refer to clause 1.0.7 of the DCP.

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
		AMD7.1.2	Open car parks are a minimum of 2.6 m wide by 5.5 m long. Note: For multi-dwelling development credit may be given for overhangs into garden areas by 0.5 m provided appropriate wheel stops or barriers are provided.	All parking construction and design will be compliant with Australian Standard AS2890 Part 1 and 2.	Compliant
		AMD7.1.3	Car parks adjoining one wall are a minimum of 2.8 m wide by 5.5 m long.	There will be no parking against walls.	NA
		AMD7.1.4	Enclosed car parks are a minimum of 3 m wide by 6 m long.	There will be no enclosed parking.	NA
		AMD7.1.5	Visitor car parking (where required) is easily accessible and clearly designated. For development in cul-de-sacs, the site is to have a minimum frontage that enables one car to be parked in front of the site to avoid site and street congestion	Wayfinding/directional signage will be provided for general parking.	Compliant
PMD7.2	Ensuring that access driveways and garage frontages do not visually dominate development.	AMD7.2.1	Garages in buildings directly addressing the street do not project in front of other parts of the dwelling and, preferably, are recessed behind the front facade of the dwelling.	There are no garages proposed.	NA
PMD7.3	Ensuring vehicle access to and from the site is safe.	AMD7.3.1	Vehicles accessing dwellings (other than dwellings served directly from the street frontage) as well as visitors to a development must be able to enter and leave the development in the forward direction. Note: The 85th percentile vehicle must be able to turn onsite in no more than a two-point turn.	The site will include separate entry and exit driveways to ensure the forward direction of vehicles when entering and exiting the site.	Compliant
PMD7.4	Minimising the number and width of access driveways consistent with the traffic function of those driveways.	AMD7.4.1	Access is provided through a single consolidated access driveway from a public road (other than a laneway)	There will be separate singular access and egress driveways off Boundary Street.	Compliant
		AMD7.4.2	No lane access is relied on for site access/egress.	Hyde Lane is located on the site's western boundary. The site will not be accessible from Hyde Lane.	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
		AMD7.4.3	Access driveways directly serving double garages do not exceed 3.5 m in width at the property boundary.	There are no garages proposed.	NA
		AMD7.4.4	Access driveways serving: Up to two dwellings are concreted (preferably coloured), sealed or paved and are no more than 3 m in width along their length. Between 3 and 5 dwellings are concreted (preferably coloured), sealed or paved and are no more than 3.5 m in width. Note: Access driveways may exceed the above minima at the kerb by no more than 0.5 m.	The entry and exit driveways will be concreted. All parking construction and design will be compliant with Australian Standard AS2890 Part 1 and 2.	Compliant
		AMD7.4.5	Access driveways are provided with a cross-over in accordance with Council's Engineering Subdivision and Development Guidelines.	Other than the main entry and exit driveways, there are no additional access driveways proposed.	NA
		AMD7.4.6	Cross grades for access ways and parking areas do not exceed 4% grade.	All pavements will have a minimum grade of 1% and maximum grade of 4%.	Compliant
		AMD7.4.7	Footpath is provided to all frontages of the development in accordance with Council's Engineering Subdivision and Development Guidelines	Footpaths will be constructed between all general common buildings. This will connect to the entry driveway, which has frontage to Boundary Street.	Compliant
		AMD7.4.8	If not already provided, roadways directly adjacent to the development are to be provided with kerb and gutter, including, where necessary, shoulder widening and seal to Council's standard.	Roadways directly adjacent to the development already have kerb and gutter established and no further modification is required.	Compliant
PMD8	Development provides facilities consistent with the residential use of the land including:	-	-	-	-
PMD8.1	Letterboxes.	AMD8.1	Letterboxes are provided for each dwelling.	Mail will be handled in a central facility which will control mail for all of the occupants. The site will have one mailing address mail,	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PMD8.2	Clothes drying facilities.	AMD8.2	Clothes drying facilities (either an outdoor drying yard or mechanical dryer) are provided for each dwelling with drying yards screened from public areas and common access areas of the development. (Note: Tilt type clothes lines are preferred for better use of recreational areas).	Clothes lines will be provided at each laundry building. They will not be visible from public areas surrounding the site and located separate from recreational space and common areas within the site.	Compliant
PMD8.3	Garbage bin storage.	AMD8.3	Garbage bin storage is available for each dwelling in a screened area behind the front building line and accessible to the street without passing through the dwelling.	The recycle and waste bins will be located in a screened area in line with the front building with direct access for trucks.	Compliant
PMD8.4	Outdoor service areas.	AMD8.4.1	Drying yards or garbage bin storage areas are not to be within the defined for private open space.	The recycle and waste bins will be located close to the entry driveway separate from recreational space and common areas.	Compliant
		AMD8.4.2	Space is available to locate an outdoor storage area of $6m^3$ for each dwelling. Note: This could include a garden shed or dedicated space within a garage that does not reduce the floor area of that garage below the minimum dimensions.	Appropriate outdoor storage areas will be provided at the modules and across the site.	Compliant
PMD9	Development is served by necessary utilities and services including:	-	-	-	-
PMD9.1	Telephone/data, water, sewer, power and gas.	AMD9.1.1	Separate water, telephone/data, sewer, power (underground) and gas services are provided to each dwelling, where available.	Each module and amenity building will be connected to the sewer and electricity. Amenity buildings will have telephone lines where necessary.	Compliant
PMD9.2	Onsite water storage.	AMD9.2	Water storage tanks shall be no closer to side and rear boundaries than 900 mm and if adjacent to the dwelling it is serving, not on the north side of that dwelling.	Water will be provided from the potable water connection point. Water storage tanks for fire-fighting will be located close to the main administration buildings	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PMD9.3	Drainage Note: Headwork's and/or development servicing plan charges may be applicable to the development. Applicants are advised to contact Council's Engineering Services Department to determine these charges, which are payable prior to the release of any Construction Certificate.	AMD9.3	All roof and surface water drainage shall be designed to provide for conveyance of these flows as per AS3500 after considering the Australian Rainfall Guidelines, to the appropriate road, public stormwater drainage system or watercourse where approved to do so.	Gutters and downpipes for building drainage and plumbing will be designed in accordance with AS3500. Building drainage will be suitable for downpours. Stormwater will be directed away from buildings into drainage channels and retention basins.	Compliant
Chapter 11 – Car parking and vehicle access					
Access, movement and circulation					
PCP1	Parking operations are logical and the circulation pattern clearly defined through the use of appropriate traffic management measures.	ACP1	Compliance with Australian Standard AS2890 Part 1 and 2.	All parking construction and design will be compliant with Australian Standard AS2890 Part 1 and 2.	Compliant
PCP2	Parking areas are designed to operate in a safe manner for drivers and pedestrians.	ACP2.1	All car parking areas shall be lit in accordance with the relevant Australian Standard.	All parking construction and design will be compliant with Australian Standard AS2890 Part 1 and 2.	Compliant
		ACP2.2	Vehicles enter and leave the site in a forward Direction.	The site will include separate entry and exit driveways to ensure the forward direction of vehicles when entering and existing the site.	Compliant

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PCP3	Finished surface of the car park, driveway, turning circle and loading areas is of a suitable material for the proposed activity.	ACP3.1	Unless specified to a different standard elsewhere in this DCP, all car parking areas, driveways, turning areas and loading areas are paved in either a bitumen seal coat, asphaltic or bituminous concrete, cement concrete, concrete paving blocks, brick paving blocks, all weather pavement or other suitable material. *Note: The standard of paving required will be dependent upon the type of development proposed, with regard to traffic loadings including turning movements of heavy vehicles.* *For specific details refer to Council's Engineering Subdivision and Development Guidelines.*	The existing loop road within the site, including proposed separate entry and exit driveways, are already sealed. The parking areas on the ring road will be constructed from bituminous concrete. The parking area on the southern boundary of the site will be compacted to form a suitable surface to allow parking.	Compliant
PCP3	Pedestrians are separated from vehicular traffic as much as physically possible.	ACP3	Pedestrian thoroughfares are provided throughout the car parking area to fully separate pedestrian and vehicular traffic.	Pathways within the site will connect the modules, amenity buildings, driveways and parking areas.	Compliant
PCP4	For one way traffic, circulation is in the clockwise direction.	-	None provided.	The entry and exit driveways will accommodate one way traffic in a clockwise direction.	Compliant
PCP5	Solid walls or other obstructions to visibility are avoided on the inside of tight turns.	-	None provided.	No common buildings or modules are proposed to be constructed in a location which would obscure the driveways.	Compliant
PCP6	Entry/Exit points are clearly marked to avoid any confusion. Within the car park, signs are provided where necessary so that drivers wishing to leave the car park may do so by the most efficient route. Signposting is easily seen and understood.	ASP6	Separations of entry and exits comply with Tables 11.3.	Appropriate wayfinding/directional signage will be placed at the entry and exit driveways in addition to the carparking areas.	Compliant

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PCP7	Directional markings are clearly set out on the pavement in such a manner as to be easily readable and understandable to the users of the car park.	-	None provided.	Appropriate pavement markings will be placed in the carparking areas.	Compliant
PCP8	All parking bay delineations, arrows and other information for drivers painted on the pavement are marked using white (or high contrast) paint or approved markers. Delineations are not less than 75 mm or greater than 100 mm wide. Note: In certain situations, the installation of signs to Council's satisfaction may be required over and above the normal requirements. Signposting and marking for parking areas are to be submitted with the development application for Council's consideration.	-	None provided.	Appropriate markings will be used in the carparking areas in accordance with the DCP.	Compliant
PCP9	Where the development generates a reasonable volume of traffic, separate entry and exit locations are provided with suitable separation between the access points.	ACP10.1	The design of access points and internal circulation areas is such that entry to and exit from the site is made by driving in a forward direction. Note: The reversing of vehicles onto the street will generally be accepted, except for single residential dwelling houses and dual occupancies. Some minor relaxation may be permitted in this matter depending on the conditions of the site, the location of the site and the nature of the development.	The site will include separate entry and exit driveways to ensure the forward direction of vehicles when entering and existing the site.	Compliant

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PCP10	Good sight distance is provided onto footpath areas from vehicles leaving car parking areas.	-	None provided	The carparking areas will be appropriately distanced from surrounding pathways to ensure pedestrian safety and vehicle clearance. Wayfinding/directional signage and lighting will be provided for roadways and parking areas.	Compliant
PCP11	Garages in residential development are capable of easy entry and exit.	ACP11	When garages are provided in parking areas associated with residential developments, the following minimum dimensions are achieved: Minimum internal width: 3.0 m Minimum width between door jambs: 2.75 m Minimum aisle widths to allow adequate access to garages are: 6.7 m where the door jamb width is 2.75 m 6.2 m where the door jamb is 2.90 me	There are no garages proposed.	NA
PCP12	Grades of parking areas are minimised, consistent with achieving adequate drainage	ACP12.1	All car parking areas shall be sealed and effectively graded and drained.	All carparking areas will be effectively graded and drained in accordance with Australian Standard AS2890 Part 1 and 2 and the DCP.	Compliant
		ACP12.2	The maximum acceptable grade for sloping parking (including access aisles) is 10%. For all areas the minimum longitudinal grade and the minimum cross fall grade is as shown in Table 11.4	All carparking areas will be appropriately graded and sloped in accordance with Australian Standard AS2890 Part 1 and 2 and this DCP.	Compliant
PCP13	Turning circles are to cater for the range of vehicle sizes anticipated to utilise the site.	ACP13.1	Turning circles are calculated using the 85th percentile vehicle (see Appendix F) and for trucks appropriate turning templates from AS2890 Part 2 are utilised for rigid and articulated vehicles (see Appendix F), as required to service the development.	Turning circles will be appropriately constructed in accordance with Australian Standard AS2890 Part 1 and 2 and this DCP.	Compliant
		ACP13.2	In a large residential development of 12 or more dwellings of the type which includes building back from the street, provision is made for delivery vehicles, etc to be accommodated close to a suitable entrance to the building.	A dedicated bay will be constructed for deliveries and waste collection in close proximity to the common buildings and enclosed waste bin areas.	Compliant

ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
PCP14	Delivery areas are separated (either physically or through timed deliveries) from customer parking areas.	ACP14	These vehicles are able to drive in a forward direction when both entering and leaving the site.	The site will include separate entry and exit driveways to ensure the forward direction of vehicles when entering and existing the site.	Compliant
PCP15	Provisions are made in the design of loading docks so that delivery vehicles do not conflict with customer traffic.	ACP15	Loading docks provide for the relevant design vehicle that will serve the development. Note: The provisions of AS2890.2 are applicable.	No loading docks are proposed for the development.	NA
Number of car parking spaces required					
PNC1	New car parks are sufficient in number and design to provide appropriately for the needs of new development.	ANC1.1	Car parking is provided at the rate set out in Table 11.5. For multi-dwelling housing this includes: One bedroom dwelling: 1 space (undercover) per dwelling; Dwellings containing two or more bedrooms: one additional space per dwelling (may be covered or uncovered); Visitor parking: One space per three dwellings or part thereof (may be uncovered).	Parking will include in total 95 parking spaces: • 51 standard spaces; • 6 accessible spaces; • 6 visitor spaces; • 2 visitor accessible spaces; and • 30 spill over parking spaces. The site will accommodate a construction workforce of 96 persons and operational workforce of 72 persons. A large portion of the workforce will travel to and from the site via the company provided bus system and not require the use of private vehicles.	Non-compliant
		ANC1.2	Car parking is provided on the site of the development.	Car parking (as listed above) will be provided on the site.	Compliant
Chapter 12 – Tree removal or lopping					
PT1	Trees are protected, unless they are an environmental weed species.	AT1.1	Development is designed to avoid impact on designated trees unless this would reduce the development yield of the property.	The design of the project will take into consideration the existing trees and other vegetation on-site and minimise the area of clearance wherever practicable.	Compliant

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ID	Performance criteria	ID	Acceptable solutions	EMM comments	Compliance
		AT1.2	Designated trees are retained where not directly impacted by a development or where they are not within 3 m (measured from the trunk) of a building approved as part of a development or where they would create a safety risk for traffic unless a qualified arborist has assessed the tree and found that by reason of its health or otherwise that it is not worthy of retention.	The design of the project will take into consideration the existing trees and other vegetation on-site and minimise the area of clearance wherever practicable.	Compliant
PT2	Management of existing trees minimises the threat to the long term survival of the tree	AT2	Pruning or protection works are carried out in accordance with Australian Standard 4373.	Vegetation will be maintained wherever possible. Any pruning or protection works will be carried out in accordance with Australian Standard 4373, this DCP and mitigation measures provided in the BDAR.	Compliant

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