Health Infrastructure
Air Quality Assessment

Mental Health Unit and Emergency Department
Broken Hill Hospital
Broken Hill, NSW

20 October 2023

63879/151558 (Rev 1)

JBS&G Australia Pty Ltd

www.jbsg.com.au

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AMP	Asbestos Management Plan
AQA	air quality assessment
AQIA	Air Quality Impact Assessment
ASS	acid sulfate soils
bgs	below ground surface
BoM	Bureau of Meteorology
BSB	Botany Sand Beds
BTEX)	benzene, toluene, ethylbenzene, xylene
CEMP	Construction Environmental Management Plan
CLM	Contaminated Land Management
COPCs	Contaminants of Potential Concern
DDR	Dust Deposition Rates
DLWC	Department of Land and Water Conservation
DP	Deposited Plan
DP&E	Department of Planning and Environment
DSI	Detailed Site Investigation
ED	Emergency Department
EIS	Environmental Impact Statement
EPA&A	Environmental Planning & Assessment
ESD	Ecological Sustainable Development
GSW	General Solid Waste
ha	hectares
JBS&G	JBS&G Australia Pty Ltd
km/h	Kilometres per Hour
KWA	Key Worker Accommodation
LAA	Licensed Asbestos Assessor
LEP	Local Environmental Plan
LGA	Local Government Authority
LHD	Local Health District
m	Meters
MGA	Metric Rectangular Grid
MHU	Mental Health Unit
mL	Millilitre
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NOHSC	Australia National Occupational Health and Safety Commission
NSW	New South Wales
PAH	Polycyclic Aromatic Hydrocarbons
PASS	Potential Acid Sulfate Soils
PCB	Polychlorinated Biphenyls
PFAS	Per-and-Poly-Fluoroalkyl Substances
PM	Particulate Matter
POEO	Protection of the Environment Operations
RAP	Remediation Action Plan
REF	Review of Environmental Factors
RL	Relative level
SEPP	State and Environmental Planning Policy
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
TSP	Total Suspended Particulates
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compounds
WH&S	Work Health and Safety

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Health Infrastructure (HI, the client) for the provision of environmental services associated with the proposed Broken Hill Hospital Redevelopment (BHHR, the site). The site is formally identified as part Lot 4376 in DP757298 and comprises an area of approximately 11, 000 m^2. The proposed redevelopment includes a new Mental Health Unit (MHU) including new courtyards/gardens and a new/expanded Emergency Department (ED) including a new ambulance drop off area as well as new car parking and associated landscaped areas. The site location and layout are shown on **Figures 1** and **2** respectively, and proposed development plans have been provided as **Appendix A**.

An air quality assessment (AQA) is required as part of the HI Review of Environmental Factors (REFs), in line with the HI 'Design Guidance Note (DGN) 017 – Construction Works under SEPP', which states that "*certain development for the purpose of a Health Service Facility can be undertaken as development without consent – i.e. that approval is not required from a consent authority. In these circumstances, a Review of Environmental Factors (REF) is prepared to assess whether there will be a significant environmental impact".* As such, the AQA must include the assessment of construction and operational air quality impacts for the onsite and on nearby sensitive receivers during both the redevelopment program.

This AQA includes detailed review of previous investigations, site setting, environmental condition, surrounding land uses, known contamination status of the site, proposed development scenario was undertaken in accordance with the regulatory requirements stated in **Section 5.4**, and to meet the HI REF requirements for the redevelopment.

Potential sources of air and odour emissions were identified, as detailed in **Section 5.1**, principally associated with movement of plant/vehicles and construction materials (gravel/sands/concrete) and the use of fuels (for equipment/plant etc.). A qualitative assessment of potential health and nuisance impacts associated with emissions to air, specifically dust, and odours was performed in accordance with relevant NSW Environment Protection Authority (EPA) guidelines and also industry best practice guidance.

JBS&G consider potential sources of air emissions can be adequately managed via implementation of appropriate controls and monitoring of air quality impacts (if any) as detailed in **Section 6** the duration of the Early and Main Works program.

1. Introduction

1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Health Infrastructure (HI, the client) for the provision of environmental services associated with the proposed Broken Hill Hospital Redevelopment (BHHR, the site). The site is formally identified as part Lot 4376 in DP757298 and comprises an area of approximately 11, 000 m^2. The proposed redevelopment includes a new Mental Health Unit (MHU) including new courtyards/gardens and a new/expanded Emergency Department (ED) including a new ambulance drop off area as well as new car parking and associated landscaped areas. The site location and layout are shown on **Figures 1** and **2** respectively, and proposed development plans have been provided as **Appendix A**.

The air quality assessment, documented herein, has been limited to only the impact of construction works in aforementioned areas of the LHD that are subject to redevelopment.

The HI Review of Environment Factors (REF) for the proposed redevelopment requires that an AQA is completed in order to address the following items during both the Early and Main Works components of development:

- Could the works result in dust generation?
- Could the works generate odours (during construction or operation)?
- Will the works involve the use of fuel-driven heavy machinery or equipment?
- Are the works located in an area or adjacent to land uses (e.g. schools, nursing homes) that may be highly sensitive to dust, odours, or emissions?
- Will the works have any adverse impact on air quality?
- Consider the cumulative air quality impacts, the surrounding sensitive receivers and the potential adverse effects that the activity may have on air quality.

As such, this AQA details the potential construction and operational air quality impacts to both onsite and on nearby sensitive receivers and outlines the proposed management and mitigation measures that would be implemented to reduce any air quality impacts.

The AQA presented herein has been developed with consideration to the *National Environment Protection (Ambient Air Quality) Measure* (Air Quality NEPM 2016, updated 2021) and Chapter 3 Hazardous and Offensive Development of *State and Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP[1]) and outlines the detailed assessment of potential air quality impacts and appropriate management and mitigation measures that may be required during the development activities.

1.2 Proposed Development/Remediation Scenario

As discussed above, the site is proposed to be developed for ongoing hospital use, with Main Works comprising the construction of a new MHU and ED upgrade. The anticipated footprint of the Main Works areas are shown on **Figure 2** and detailed design plans are provided in **Appendix A**.

1.3 Objectives and Scope of Work

The objective of the assessment is to conduct an AQA to satisfy the HI REF provided for the proposed development. The scope of works comprised:

[1] *State Environment Planning Policy No. 33 – Hazardous and Offensive Development (*SEPP 33) has been repealed and the requirements incorporated into the Resilience and Hazards SEPP 2021 as of 1 March 2022.

- Detailed review of the site setting, environmental condition, surrounding land uses and development scenario;
- Identification of potential sources of air and odour emissions associated with the proposed development and potential receptors;
- An assessment of any air quality impact in accordance with any relevant Environmental Protection Authority (EPA) guidelines; and
- Appraisal of appropriate air quality impact mitigation, monitoring, and control measures.

2. Summary of Site Condition

2.1 Site Details

The site location and proposed layout are shown on **Figures 1** and **2**. The site details are summarised in **Table 2.1** and described in more detail in the following sections.

Table 2-1 Site Identification Details

Site Legal Identifier (as shown on Figure 2)	Lot 4376 in DP 757298
Site Address	176 Thomas Street, Broken Hill, NSW 2880
Site Area	11,000 m^2
Local Government Authority	City of Broken Hill
Approximate Coordinates (GDA 94 Map Grid of Australia (MGA) 54)	Easting: 542964.791 Northing: 6465282.82
Registered Site Owner	Health Administration Corporation
Current Zoning	Zone R1 – General Residential (*Broken Hill Local Environmental Plan 2013*)
Previous Land Uses	Vacant Land
Current Land Uses	Health Service
Proposed Land Uses	Health Service

2.2 Site Condition

The site layout comprising the MHU and ED developable areas, are three approximately rectangular-shaped parcels of land, separately situated within the Broken Hill Hospital site boundary. A roadway within the hospital boundary, leading from Thomas Street to south and Morgan Street to the east, crosses through both the MHU and the ED sites.

The area of the proposed MHU upgrade is predominately sealed, comprising of a carpark to the west, the roadway in the central east, and part of the hospital complex to the east. An unsealed area with some trees is present to the southwest of the carpark within the MHU.

The area of the proposed ED upgrade is predominately sealed, comprising of the Ambulance Bay entrance and carport to south, and the roadway to the north. Two unsealed landscaped verges are present to the east and west of the ED boundary.

There was no evidence of significant contamination at the site in the form of asbestos containing materials (ACM) fragments, odours or staining on the surfaces, nor aboveground or underground fuel storage tanks (AST/UST) observed within the investigated areas.

2.3 Surrounding Environment

The current land uses of adjacent properties or properties across adjacent roadways are summarised below.

- North – the Hospital is bound to the north by Morgan Street and low-density residential dwellings beyond.
- West – the Hospital is bound to the west by Bromide Street and low-density residential dwellings, a private clinic beyond.
- East – the Hospital is bound to the east by Chloride Street and low-density residential dwellings beyond.
- South – the Hospital is bound to the south by Thomas Street and low-density residential dwellings and a pathology laboratory beyond.

2.4 Environmental Setting

The environmental setting of the site has been detailed in previous investigations (JBS&G 2023a[2] and JBS&G 2023b[3]). Environmental characteristics as relevant to the AQA have been summarised within **Section 2.4**.

2.4.1 Topography

A search of elevation contours was completed by Lotsearch (2022[4], **Appendix B**), which indicates that the areas of the ED and MHU are relatively flat at an elevation of 330 m Australian Height Datum (AHD), with a steep decline northwest of the MHU and within the Hospital boundary, to 320 m AHD. The area of the KWA is relatively flat at an elevation of 322 m AHD, with a steep decline south within the Hospital boundary, to 312 m AHD. The area in vicinity of the hospital generally slopes east to northeast from this elevated northwest part of the hospital site, based on Lotsearch (2022) elevation contours. Some areas of the hospital site also appear to have been artificially raised for landscaping or building, particularly in the vicinity of Kincumber House, external to the site.

External to the northern site boundary, a steep descent from Morgan Street northward to Morgan Lane and Sulphide Street is noted on Google Street View.

2.4.2 Geology and Soils

Reference to Lotsearch (2022, **Appendix B**) indicates that site is underlain by Sundown Group Siliciclastic sedimentary rock, comprising interbedded pelite, psammopelitic and psammitic metasedimentary rocks.

The soil classification order is tenosol, which occurs on hills with small valley plains. Tenosols are described as shallow, dense loamy soils to shallow calcareous loamy soils and sands occurring on hills.

It is noted that studies have observed elevated background levels of heavy metals in soils, particularly lead, in the City of Broken Hill, which are associated with the town's historic and ongoing mining industry (Yang & Cattle 2015[5]; Kristensen & Taylor 2016[6]).

Recent investigations as part of the detailed site investigation (DSI, JBS&G 2023a and JBS&G 2023b) have identified fill material underlying the KWA, ED and MHU portions of the site. Fill in the ED and MHU ranged in depth between 0.1 and 1.4 m deep, and comprised roadbase, gravels, clays and sands. Trace building rubble inclusions, slag and 2 fragments of asbestos containing material (ACM) were encountered within the MHU. Fill material was underlain by sandy silt and weathered bedrock.

Fill material encountered at the KWA primarily comprised of sand with minor to moderate inclusions of gravel and anthropogenic inclusions, such as tile and brick fragments, cobbles, glass, plastic wood and pipe, to a maximum depth of 1.0 m bgs. Fill material was underlain by natural red/brown sand and bedrock ranging from 0.3 m bgs to 1 mbgs.

2.4.3 Acid Sulfate Soil

Reference to Lotsearch (2022, **Appendix B**) indicates that the site has an extremely low probability of acid sulfate soils (ASS). Review of the geographical and topographical location of the site has

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2 *Detailed Site Investigation Mental Health Unit and Emergency Department, Broken Hill Hospital, Broken Hill, NSW,* JBS&G Australia Pty Ltd, 23 March 2023, 63879/150471 Rev B (JBS&G 2023a)

3 *Combined Preliminary and Detailed Site Investigation Broken Hill Key Worker Accommodation (KWA), Broken Hill Hospital, Broken Hill, NSW,* JBS&G Australia Pty Ltd, 29 March 2023, 63879/150231 Rev 2 (JBS&G 2023b)

4 *Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880*, Lotsearch, Reference: LS038494 EP, 29 November 2022 (Lotsearch 2022)

5 "Bioaccessibility of lead in urban soil of Broken Hill, Australia: a study based on in vitro digestion and the IEUBK model", Yang K and Cattle SR, *Science of the Total Environment,* 538, pp.922-1933, 2015 (Yang & Cattle 2015)

6 "Unravelling a 'miner's myth' that environmental contamination in mining towns is naturally occurring", Kristensen LJ and Taylor MP, *Environmental Geochemistry and Health,* 38(4), pp.1015-1027, 2016 (Kristensen & Taylor 2016)

indicated that it is a significant distance away from tidal creeks or estuaries, and it is considered unlikely that ASS would exist at the site. Based on the identified geological and topographical setting no further consideration for the potential for ASS at the site is required.

2.4.4 NSW EPA Records

Lotsearch (2022, **Appendix B**) completed a search of the NSW EPA database for the site and immediate surrounding properties (within a 1 Km radius).

The search was undertaken through the following public registers:

- NSW EPA contaminated land public register of record of notices (under Section 58 of the CLM Act):
  - No notices have been issued under the CLM Act for the site or immediate surrounds.
- NSW contaminated sites notified to the EPA (under Section 60 of the CLM Act):
  - The site or land immediately surrounding the site do not appear on the EPA contaminated land register or list of sites notified to EPA.
- NSW EPA Government per- and poly-fluoroalkyl substances (PFAS) Investigation Program:
  - The site or land immediately surrounding the site is not listed on the NSW Government PFAS Investigation program.
- NSW *Protection of the Environment Operations Act 1997* (POEO Act) public register of licences, applications and notices (maintained under Section 308 of the POEO Act):
  - A surrendered licence for Hazardous, Industrial or Group A Waste Generation or Storage was identified within the Broken Hill Hospital site;
  - No prevention, clean-up or prohibitions notices and no transfer, variation, suspension, or revocation of an Environment Protection Licence (EPL) has been issued under the POEO Act for the site; and
  - Three surrendered licences were issued to Waterways Throughout NSW for the application of herbicides, approximately 900 m west of the site.

A search of the public register external to the immediate surrounding properties (> 1 km in radius) returned a number of active POEO licences and associated variations for the mining of minerals, extractive activities and crushing, grinding or separating activities, including but not limited to:

- Perilya Broken Hill Limited (EPL: 2683), located at 727 Argent Street, Broken Hill (approximately 2 km east of site);
- Broken Hill Operations Pty Ltd (EPL: 12559), 130 Eyre Street, Broken Hill (approximately 3.2 km south of site); and
- E.B. Mawson & Sons Pty Ltd (EPL: 11840), Holten Drive, Broken Hill Hill (approximately 2.6 km southeast of site).

A summary of the search has been included as **Attachment C**.

2.5 Site Contamination Status

Recent investigations as part of the DSI (JBS&G 2023a and JBS&G 2023b) was undertaken to assess site conditions in accordance with relevant EPA made or endorsed guidelines. The following provides a summary of the known environmental status of sub-surface media anticipated to be encountered during bulk excavation activities, to assist in identifying potential air quality issues which may be encountered during development activities.

Fill and natural material have been assessed for a broad range of contaminants of potential concern (COPCs) including heavy metals, polycyclic aromatic hydrocarbons (PAH), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), Polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs), volatile organic compounds (VOCs) and asbestos. Concentrations were generally below the adopted health-based criteria, with the exception of lead, exceeded the adopted health investigation levels (HILs) in one location within the KWA. During the investigation, no stained or significantly odorous soils were identified.

Visible asbestos containing material (ACM) noted within fill at one sample locations during the DSI (JBS&G 2023a) .

All concentrations of potential contaminants in groundwater were below the adopted site criteria with the exception of some heavy metal, VOCs and per- and polyfluoroalkyl substances (PFAS). the The DSI (JBS&G 2023a and 2023b) concluded that these detections did not affect site suitability for the proposed use.

Hazardous ground gas and soil vapour were assessed as not posing a potential risk to site receptors, therefore, not requiring remediation and/or management within the site.

The Early and Main Works will include detailed excavation for services/infrastructure installation which will result in the disturbance of site fill and underlying natural material. It is unlikely that any works activities will interact with site groundwater.

It has been recommended that a Remediation Action Plan (RAP) and asbestos management plan (AMP) be prepared to manage identified asbestos impacts across the site, and any unexpected finds during bulk excavation activities.

3. Receiving Environment

3.1 Air Quality in Broken Hill

Air quality in the Broken Hill region is impacted by a range of air pollution emissions sources including open-cut mining, motor vehicles, commercial operations and leaking pipes and tanks as well as from domestic activities such as solid fuel heaters. Major pollutants that may potentially be emitted by the proposed Early and Main Works program have been identified as follows:

Fine Particles

Particles (or particulate matter) in the atmosphere come from a wide variety of sources, including soil (dust), vegetation (pollens and fungi), fossil fuel combustion, biomass burning and industrial activities. Particles in the atmosphere typically exhibit a bi-modal size distribution with a peak in the range of 0.1 to 2.5 µm and a second peak in the range 2.5 to 50 µm. As a result, particles with a diameter of up to 2.5 µm ($PM_{2.5}$) are commonly referred to as fine particles. There is also a distinction in the health effects of different sized particles. Particles up to about 10 µm (PM_{10}) diameter are inhaled, whereas larger particles are not. On this basis, the term 'fine particles' is often used to refer to PM_{10}.

Coarse Particles

Coarse particles remain in the air for relatively short periods of time and are therefore generally not carried long distances. As a result, coarse particles tend to be a local problem rather than a regional one, generally occurring closer to industrial sources such as metal processing plants and mining operations.

The level of particles in the atmosphere is determined by measurement of their mass. In the greater metropolitan area, two methods of measurement are commonly used; total suspended particulates (TSP) and dust deposition rates (DDR). While the mass determined by these measures will include fine particles, these will generally only make a small contribution. Measurements of TSP and DDR are therefore used to provide an indication of the level of coarse particulates in the atmosphere.

Concerns about coarse particles are generally more in terms of nuisance such as damage to- or soiling of materials, or adverse effects on sensitive vegetation through surface coating.

Air Toxins

Another group of air pollutants that are potentially hazardous to human health even at low levels, are toxic compounds known as air toxins. This group includes chemicals such as benzene, formaldehyde, chlorinated hydrocarbons, PAHs, polychlorinated biphenyls (PCBs) and dioxins. Trace amounts of many of these chemicals have been detected in air in urban environments in a number of areas around the world.

In recent years there has been increasing community concern about air toxins in ambient air and the associated health effects. These compounds may cause cancer, gene mutation, reproductive malfunction, affect foetal development, or have neurotoxic effects. While the levels that endanger public health have not been established, it is believed that even very low levels, particularly under long term exposure, could have adverse effects. Many air toxins are highly volatile and evaporate readily into the air following inhalation.

Odour

Odour is measured using panels of people who are presented with samples of odorous gas diluted with decreasing quantities of clean odour-free air. The panellists report when the smell becomes detectable. Odour in air is quantified in terms of "odour units" which is the number of dilutions required to bring the odour to a level at which 50 % of the panellists can just detect the odour. This process is known as olfactometry.

Background levels of odour in the environment can vary enormously based on a range of factors.

3.2 Air Quality in Proximity of the Site

In NSW the Department of Planning & Environment (DPE) is responsible for monitoring air quality. Since 2017 air quality data has been collected from at the Broken Hill air quality monitoring station, located at the Broken Hill Airport, approximately 6 km southeast of the site.

Table 3.1 summarises the measurements of particulate matter (PM) and total suspended particles (TSP) monitoring recorded at the Broken Hill station. Results are shown as the value of particulate matter with a diameter of 10 micrometres or less (PM_{10} and $PM_{2.5}$). While hourly air monitoring regularly occurs at the station, annual data is not readily available. As such, a summary of hourly averages over a 24-hour period, recorded on 21 April 2023, has been adopted.

Table 3.1 One-Hour Average $PM_{2.5}$, PM_{10} and TSP Concentration (µg/m3) recorded at Broken Hill Airport over a 24-Hour Period (21 April 2023)

Hour (21/04/2023)	$PM_{2.5}$ hourly average[7]	PM_{10} hourly average[9]	TSP hourly average[9]
00:00	0	1	1
01:00	0	1	1
02:00	0	1	1
03:00	0	1	1
04:00	1	1	1
05:00	1	1	1
06:00	1	1	1
07:00	1	1	2
08:00	4	5	5
09:00	6	7	7
10:00	3	4	5
11:00	3	4	4
12:00	2	3	3
13:00	2	3	3
14:00	1	2	2
15:00	2	3	3
16:00	1	2	3
17:00	2	2	2
18:00	2	3	3
19:00	3	4	5
20:00	3	4	4
21:00	2	3	3
22:00	2	2	3
23:00	1	2	3
Average of 7am to 5pm (i.e. Standard Work Hours)	2.6	3.5	3.7

[7] Rural air quality network - Live air quality data, NSW Government Department of Planning and Environment https://www.dpie.nsw.gov.au/air-quality/rural-air-quality-network-live-data, as accessed on 24 April 2023.

3.3 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Broken Hill Patton Street[8]) indicates the site is located within the following meteorological setting:

- Average minimum temperatures vary from 5.4 ^{o}C in July to 18.5 ^{o}C in January;
- Average maximum temperatures vary from 15.2 ^{o}C in July to 32.8 ^{o}C in January;
- The average annual rainfall is approximately 259.8 mm with rainfall greater than 1 mm occurring on an average of 34.6 days per year;
- Monthly rainfall varies from 17.8 mm in April to 25.8 mm in February with the wettest periods occurring on average in January to March; and
- Average windspeeds are generally highest in November and September (15.3km/h at 9am, generally southerly; and 16.1 km/h at 3pm, generally westerly) and lowest in May (9.3 km/h at 9am, generally southerly; and 13.0 km/h at 3pm, generally southerly). **Plate 3.1** shows the 9am and 3pm wind rose data available for the Broken Hill (Patton Street) monitoring station from 1 May 1959 to 1 September to May 2015.

[8] http://www.bom.gov.au/climate/averages/tables/cw_047007.shtml, Commonwealth of Australia, 2013 Bureau of Meteorology, Product IDCJCM0028, accessed by JBS&G on 20 December 2022.

Plate 3.1: Wind Speed Versus Direction Plot Recorded at Broken Hill (Patton Street) Weather Monitoring Station (047007) from 1959 to 2015)

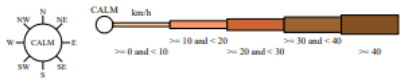
Rose of Wind direction versus Wind speed in km/h (01 May 1959 to 01 Sep 2015)

Custom times selected, refer to attached note for details

BROKEN HILL (PATTON STREET)

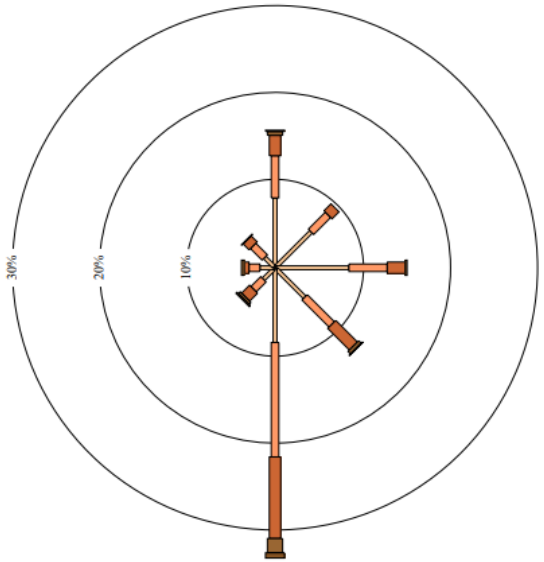
Site No: 047007 • Opened Jan 1889 • Closed Dec 2015 • Latitude: -31.9759° • Longitude: 141.4676° • Elevation 315m

An asterisk (*) indicates that calm is less than 0.5%.
Other important info about this analysis is available in the accompanying notes.



9 am Nov
1414 Total Observations

Calm 1%



Rose of Wind direction versus Wind speed in km/h (01 May 1959 to 01 Sep 2015)

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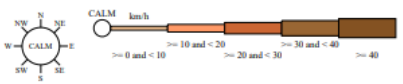

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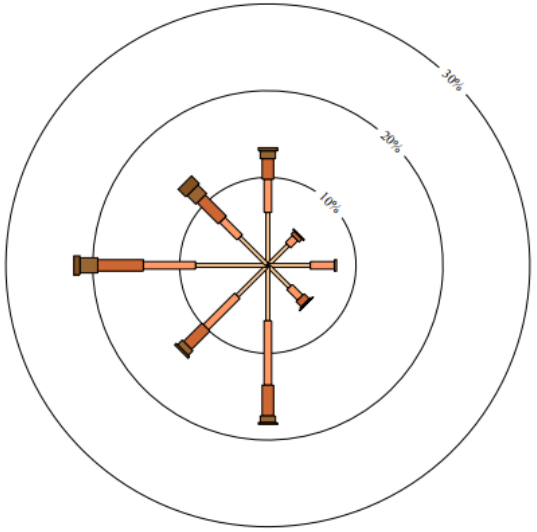

Australian Government Bureau of Meteorology

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3.4 Sensitive Receptors

NSW EPA[9] defines 'sensitive receptors' with respect to emissions to air, as the locations where people are likely to either live or work, or engage in recreational activities. In this context the sensitive receptors for the proposed Early and Main Works program include:

- On site: construction site workers (includes above and below ground workers); and
- Off-site: Workers or residents in surrounding areas.

These two groups are discussed below.

3.4.1 Sensitive Site Receptors

Any emissions to air that occur as a result of the proposed materials management and Early and Main Works construction activities have the potential to impact the workforce engaged within the site, not just potential sensitive receptors located outside the property boundaries. In this context all construction workers engaged at the site are the most sensitive receptors for the proposed works, as shown on **Figure 3**. The intention of the AQA is identify whether emissions to air or odour impacts to site construction worker would exceed acceptable exposure levels for workers in NSW.

3.4.2 Sensitive Off-Site Receptors

The site is located within the operational Broken Hill Hospital, which borders with low-density residential/commercial properties, as summarised in the review of the surrounding land uses (**Section 2.3**).

Numerous potentially sensitive receptors exist in proximity of the site which have been assessed in this AQA. These were limited those considered to be closest to the proposed main works development activities and primarily comprise staff and patients within the Broken Hill Hospital, staff and patrons of adjacent commercial properties; and residents of nearby low density houses.

In considering the impacts to these receptors it is however noted that background air quality within the Broken Hill is considered to be reduced by virtue of the general regional activities (i.e. vehicles, mining, combustion generators etc.). Given the rural setting of the site with high average maximum temperatures (**Section 3.3**), it is anticipated that surrounding buildings are fitted with recirculating air conditioning and filtration systems, effectively eliminating exposure of residents or workers within these buildings to potential air quality impacts, as may be generated during Early and Main Works development activities.

[9] In NSW EPA '*Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*' (EPA 2016)

4. Scope of Air Quality Impact Assessment (AQIA)

As discussed in **Section 1.1**, an AQA is required to meet the HI REF requirements. JBS&G consider the requirements for this assessment of air quality are as follows:

- Could the works result in dust generation?
- Could the works generate odours (during construction or operation)?
- Will the works involve the use of fuel-driven heavy machinery or equipment?
- Are the works located in an area or adjacent to land uses (e.g. schools, nursing homes) that may be highly sensitive to dust, odours, or emissions?
- Will the works have any adverse impact on air quality?
- Consider the cumulative air quality impacts, the surrounding sensitive receivers and the potential adverse effects that the activity may have on air quality.

With respect to the second requirement listed above, JBS&G has considered NSW EPA guideline documents as available for assessment of air quality. These are:

- '*Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (EPA 2016[10])'; and
- '*Assessment and Management of Odour from Stationary Sources in NSW*' NSW Department of Environment and Conservation, November 2008 (DEC 2008).

Both guideline documents are specific to emissions of air pollutants from long-term and stationary sources in NSW.

However, JBS&G considers that the scope of work under consideration at the site i.e. the Early and Main Works construction activities, is not consistent with the definition of a 'stationary source'. Any potential sources of air and odour emissions that exist during the Early and Main Works at the site will not exist in the form of fixed or stationary locations, but will instead change over time as construction works progress. Furthermore, the ultimate goal of the construction works will be to remove, or mitigate, any potential sources of air emissions or odour from the site. As such JBS&G consider that neither EPA (2016) nor (DEC 2008) are relevant for the current AQA. It is also considered that the EPA does not currently have specific guidelines to assess air impacts from construction sites i.e. to assess impacts from an area of transient sources where emissions to air are short term and can be readily controlled or managed.

In the absence of any relevant NSW EPA guidelines for assessment of air emissions from earthworks/construction, JBS&G has adopted the risk-based approach developed in the United Kingdom by the Institute of Air Quality Management (IAQM) in "*IAQM Guidance on the Assessment of Dust from Demolition and Construction - 2014*" (IAQM 2014) to address the second requirement of the SEARs for air quality. The IAQM (2014) approach is widely used in NSW for performing qualitative assessments of emissions when only short term emissions require consideration, as is the case with proposed construction program at the site. The risk based approach is included in **Section 6.2**.

[10] *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. State of NSW and Environment Protection Authority, EPA 2016/0666 (EPA 2016)

5. Assessment of Air Quality

5.1 Potential Sources of Air and Odour Emissions

As discussed in **Section 3** and **Section 4**, the screening assessment of the known environmental condition of the site and proposed Early and Main Works activities has identified the following potential sources which may result in emissions and impacts on air quality have been identified:

- movement of vehicles (for delivery) and/or plant;
- concrete sawing/cutting during development (as may be required for services installation etc);
- the use of fuels associated with earthmoving equipment/heavy machinery/equipment; and
- the excavation, storage and handling of imported construction materials (sand/gravel) and/or site fill material, natural soil.

As discussed in **Section 2.7**, whilst no unacceptable levels of asbestos contamination have been identified, a potential exists for impact to be identified in fill material at the site (which may be encountered during minor detailed excavation works/services installation). As such, management to reduce potential air quality impacts as may be associated with asbestos has been included herein for completeness (see **Sections 5.3.1** and **6.3**).

Further discussion of potential source emissions and air quality impacts specific to the proposed redevelopment is presented in the following sections.

5.1.1 Exhaust Emissions – Plant/Machinery/Equipment

It is anticipated that a range of fuel powered plant, machinery and equipment will be required to facilitate Early and Main Work development activities including vehicle movement for various deliveries throughout the construction period. However no bulk fuel storage is anticipated during these construction activities. As such, potential emissions/air quality impacts have been identified as principally associated with exhaust fumes generated by vehicles, plant, machinery or equipment use.

Diesel and petroleum combustion is a well-known process and regulated in accordance with relevant emission standards as prescribed by the NSW EPA. Exhaust emissions will be anticipated from construction machinery on site. However, noting the site is located in the centre of Broken Hill, where substantial motor vehicle activity occurs, fuel combustion emissions due to the redevelopment works are anticipated to be insignificant in comparison to existing levels of exhaust-based constituents in the surrounding area.

5.1.2 Excavation, Storage/Handling of Site Materials

As discussed in **Section 1.2**, the proposed development scenario will likely include some minor excavation and relocation of site fill and natural soils to facilitate services installation, piling/footing installation and to establish construction levels. In addition, materials will likely be imported for construction activities.

Based on review of previous intrusive investigations, site fill material and underlying natural material have been identified to primarily comprise sandy and silty sandy fill overlying natural sandy clay soils and sedimentary bedrock. Potential emissions and impacts on air quality associated with the movement/excavation of site materials have been identified as the potential generation of airborne dust particulate (respirable dust and/or asbestos fibres as discussed in **Section 5.3.1**).

While the potential for these impacts is considered to be low, given that only limited excavation works are proposed, relevant control measures to address emissions from excavation, storage and handling and/or offsite disposal of materials are presented in **Section 6**.

5.1.3 Fugitive Dust

Exposed surfaces will be anticipated to generate dust by wind movement and erosion of surface particles. Any designated unsealed haulage roads and proposed areas of material stockpiling have been considered as having an unlimited wind erosion potential subsequent to the completion of construction (and subject to any application of stabilising materials such as road base gravel where hardstands are not encountered).

The greatest potential for the release of air pollutants from stockpiled material will be during handling of soils and/or emission of fugitive dusts when stockpiled materials are uncovered.

5.2 Assessment of Impacts from Dust

IAQM (2014) presents a robust method for assessment of the dust impact risk associated with construction/earthworks in order to determine the level of site-specific mitigation that should be applied. The method is a five step approach which is presented in **Sections 5.2.1** to **5.2.4** and summarised as follows:

- Step 1: Screen the Need for a Detailed Assessment. IAQM (2014) considers that no further assessment is required if there are no receptors within a certain distance of the works.
- Step 2: Assess the Risk of Dust Impacts Arising. IAQM (2014) requires this be completed for the demolition, earthworks, construction and trackout, with consideration given to the scale of each activity in conjunction with the sensitivity of the area;
- Step 3: Site-specific mitigation taking into consideration any requirements issued by the relevant local government authority;
- Step 4: Determine Significant Effects i.e. determine the impacts expected when mitigation measures are in place and whether these are considered significant; and
- Step 5: Prepare a Dust Assessment Report that documents the findings of Steps to 4.

5.2.1 Step 1 Screen the Need for a Detailed Assessment

IAQM (2014) considers that a detailed assessment is normally required where there is:

- a ‘human receptor’ within:
    - 350 m of the boundary of the site; or
    - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).
- an ‘ecological receptor’ within:
    - 50 m of the boundary of the site; or
    - 50 m of the route(s) used by construction vehicles on the public highway, up to 500 m from the site entrance(s).

As discussed in **Section 3.4** and shown on **Figure 3** there are human receptors within 350m of the site, which triggers the need for the detailed assessment of dust impacts. The assessment has been undertaken for human receptors only, as no ecological receptors of emissions to air were identified.

5.2.2 Step 2 Assess the Risk of Dust Impacts Arising

In accordance with the IAQM guidance (Section 7, Step 2: Assess the Risk of Dust Impacts) three decisions must be made in Step 2, defined as Step 2A, Step 2B and Step 2C.

Step 2A: Define the Potential Dust Emission Magnitude

For Step 2A each potential activity i.e. minor earthworks, construction and trackout must be assigned a dust emission magnitude as either large, medium or small.

- The required Early and Main Works program is assessed as 'small' in relation to emissions magnitude, given the project details presented in **Section 1.2** align with the IAQM (2014) construction description of small being a "…*Total building volume <25,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber).*"

The required trackout works are assessed as 'medium' in relation to emissions magnitude, which is generally consistent with the IAQM (2014) definition of medium as 10-50 heavy duty vehicle movements in any one day, a moderately dusty surface material (e.g. high clay content) and unpaved road lengths 50 m – 100 m. While more than 10 outwards truck movements per day are expected given the size of the LHD property there is potential for construction vehicles to drive along more than 50m of unpaved road during the Early and Main Works.

Step 2B: Define the Sensitivity of the Area

IAQM (2014) requires that sensitivity of the area to dust emissions be determined as 'high', 'medium', or 'low' by considering a number of factors:

- the specific sensitivities of receptors in the area;
- the proximity and number of those receptors;
- in the case of PM10, the local background concentration; and
- site-specific factors, such as whether there are natural shelters, such as trees, to reduce the risk of wind-blown dust.

In accordance with IAQM (2014) Tables 2 to 4, the following receptor sensitivity has been determined:

The construction workforce (on-site receptor on **Figure 3**)

- Low sensitivity to dust soiling.
- Low sensitivity to human health.

Surrounding Community (off-site receptors on **Figure 3**)

- Residents on their private properties are considered to have a high sensitivity to dust soiling and human health
- Staff working in ares of the LHD outside of the Early and Main Works areas are considered to have a medium sensitivity to dust soiling but a high sensitivity to human health.

Considering the above receptor sensitivities, **Table 5.1** and **Table 5.2** have been reproduced from IAQM (2014) (for only the receptor settings applicable to this project) so that the sensitivity of the area as a whole can be determined.

For assessing the sensitivity to human health impacts, the mean background PM10 concentration of 3.5 µg/m^3 has been used given the local ambient air quality measured at the nearest monitoring station (see **Table 3.1**).

Table 5.1 Sensitivity of the Area to Dust Soiling of People and Property (as extracted from IAQM 2014 Table 2)

Receptor Sensitivity	Number of Receptors	Distance from Source (m)			
		<20	<50	<100	<350
High	10-100	High	High	Medium	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Table 5.2 Sensitivity of the Area to Human Health Impacts (as extracted from IAQM 2014 Table 3)

Receptor Sensitivity	Annual Mean PM10 Concentration	Number of Receptors	Distance from Source (m)				
			<20	<50	<100	<200	<350
High	>32 µg/m3	>100	High	High	High	Medium	Low
	28-32 µg/m3	>100	High	High	Medium	Low	Low
	24-28 µg/m3	>100	High	Medium	Low	Low	Low
	<24 µg/m3	>100	Medium	Low	Low	Low	Low
Low	<24 µg/m3	>1	Low	Low	Low	Low	Low

On the basis of **Table 5.2** where the average PM_{10} concentration of 3.5 µg/m^3 is applied, the sensitivity of the area to Early and Main Works on the site is considered to be medium. However owing to the **Table 5.1** classification of 'high' sensitivity, this category has been applied to both earthworks and trackout activities.

Step 2C: Define the Risks of Impacts

In accordance with IAQM (2014) Section 7.4, **Table 5.3** has been prepared showing the risk of dust impacts in the area assuming no mitigation works occur. The categorisation of risk in **Table 5.3** is based on the dust emission magnitude, i.e. small for this site, in combination with the sensitivity of the area.

Table 5.3 Risk of Dust Impacts (as extracted from IAQM 2014 Tables 7 and 9)

Potential Impact	Number of Receptors	Demolition	Earthworks	Construction	Trackout
Dust Soiling	>100	N/A	N/A	Low risk	Low risk
Human Health	>100	N/A	N/A	Low risk	Low risk

Based on **Table 5.3**, the proposed construction and trackout activities are conservatively assessed as presenting a low risk for both dust soiling and human health impacts in the event that dust mitigation measures are not implemented.

5.2.3 Step 3 Site Specific Mitigation

IAQM (2014) identifies a range of appropriate dust mitigation measures that should be implemented where the risk of dust impacts is considered to be low. These measures are presented in **Section 6**.

5.2.4 Step 4 Determine Significant Impacts

In accordance with IAQM (2014), the final step in the assessment is to determine the significance of any residual impacts, following the implementation of mitigation measures, and Section 9 of IAQM

(2014) states that for almost all construction activity the aim should be to prevent significant effects on receptors through the use of effective mitigation, and that experience shows that this is normally possible.

An air quality management strategy has been developed to outline minimum controls required to manage potential emissions and air quality related issues, as outlined in **Section 6**. Implementation of the mitigation measures as recommended in **Section 6** are considered to be sufficient for effective management of off-site dust impacts.

5.3 Assessment of Other Emissions to Air

5.3.1 Asbestos Removal and Management

Given that the Main Works program will be undertaken following remediation of existing impacts on site, such as the presence of asbestos containing materials in soil and existing structures, the Air Quality Management Plan has not considered the potential for asbestos to be present on site in any form.

5.3.2 Odour Emissions

As outlined in **Section 3**, site soils do not pose a potential significant source of odour generation potential and do not contain levels of contaminants required to generate potential odour emissions upon excavation. Similarly the proposed construction works are unlikely to cause the emission of substantial odours across the site as a whole, despite the likelihood that individual activities may cause localised odours. These localised odours are likely to be intermittent and are best controlled as part of individual job risk analyses. As such the Air Quality Management Plan has not considered the potential for substantial odour causing activities.

5.4 Regulatory Requirements

Development activities on site will be required to be completed in accordance with several sections of environmental and occupational health and safety legislation and associated regulations. The primary Acts, Regulations and Guidelines are listed below with a brief summary of their applicability. Please note that this list is not intended to be a comprehensive listing of acts and regulations. The site owner and contractors are required to satisfy themselves that all applicable permits, licences and legislation have been obtained and their conditions satisfied.

Environmental Planning & Assessment Act 1979

The overarching Act to institute a system of environmental planning and assessment for NSW.

Work Health and Safety Act, 2011

The overarching Act for NSW setting law relating to employee health and safety and employer responsibilities.

Work Health and Safety Regulation, 2017

Sets Regulations and details the duties for employers to achieve required employee health and safety performance.

***Contaminated Land Management Act 1997* (*CLM Act*)**

The *Contaminated Lands Management Act 1997* (CLM Act) controls the assessment of contamination and requirement of remediation of soils and groundwater.

Protection of the Environment Operations (Clean Air) Regulation 2010, under the POEO Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) is the key piece of environment protection legislation administered by the EPA.

National Environment Protection (Ambient Air Quality) Measure (NEPC 2021)

National guidelines for the assessment of ambient air quality. These guidelines provide national air quality standards and criteria for a range of pollutants.

Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA 2016)

NSW regulatory guidelines outlining the methods for detailed quantitative air quality assessments from stationary sources.

***Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition, 2005, Australia National Occupational Health and Safety Commission* (NOHSC 2005)**

Guidelines for the assessment of airborne asbestos fibres including relevant workplace exposure standards.

6. Air Quality Management Strategy

The following section provides the management and/or control measures which can be implemented to address potential sources of air quality and emissions impacts identified in **Section 5.1.** These have been prepared in general accordance with relevant regulatory guidelines (**Section 5.4**) and the recommendations in IAQM (2014) to keep dust emissions to a minimum and mitigate what would otherwise be considered a medium risk.

Table 6.1: Key Features of Air Quality Management Required During the Main Works Program

ID	Mitigation Measure
General Controls Required for the Work Area	
01	Display the name and contact details of person(s) accountable for air quality issues on the site boundary[1].
02	Develop plans for dust management as part of the Construction Environmental Management Plan (CEMP). As a minimum daily visual inspection of dust emissions on the site boundary is required. Given the sensitivity of the LHD personnel who will continue to use land close to the redevelopment works it is recommended that realtime PM10 continuous monitoring take place while ground disturbance works occur[1,2].
03	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken[1].
04	Make the complaints log available to the local authority when asked.
05	Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book[1].
06	Undertake daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked[1,4].
07	Carry out regular site inspections to monitor compliance with the CEMP, record inspection results, and make an inspection log available to the local authority when asked[4].
08	Increase the frequency of site inspections by the person accountable for air quality and dust issues on site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions[4].
09	Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible[3].
11	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site[1].
12	Avoid site runoff of water or mud[1].
13	Keep site fencing, barriers and scaffolding clean using wet methods.
14	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below.
15	Ensure all vehicles switch off engines when stationary - no idling vehicles.
16	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable.
17	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.
18	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate[1].
19	Use enclosed chutes and conveyors and covered skips.
20	Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate.
21	Ensure equipment is readily available on site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods[1].

22	Avoid bonfires and burning of waste materials.
Additional Controls Required During Early Works and Ground Preparation	
23	Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable[1].
24	Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable[4].
25	Where practicable, only remove the cover in small areas during work and not all at once
Additional Controls Required During Building Construction	
26	Avoid scabbling (roughening of concrete surfaces) if possible
27	Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place.
Additional Controls Required During Trackout	
28	Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use.
29	Avoid dry sweeping of large areas.
30	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport[4].
31	Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable.
32	Record all inspections of haul routes and any subsequent action in a site log book[1].
33	Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned[4].
34	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable) [1].
35	Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits.
36	Access gates to be located at least 10 m from receptors where possible.

Notes:

1. The task can be completed as per the requirements of the Contractors Environmental Management Plan (CEMP).
2. For further details see **Section 6.2**.
3. For further details see **Section 6.5.**
4. For further details see **Section 6.4.**

6.1 Diesel Particulate Matter Exposure Monitoring

Under the proposed redevelopment plans, it is anticipated plant/equipment utilised at the site will meet the minimum emissions standards outlined by the NSW EPA (required for registration), and standard construction requirements (i.e., documentation of plant maintenance and service history checklists etc.). As such, it is not anticipated that active monitoring for diesel particulate is required as part of site development activities.

6.2 Real-Time Respirable Particulate (Dust) Monitoring

Only required when tasks involving active ground disturbance are proposed: The preferred method of health monitoring is to undertake real-time assessment of levels of airborne particulates and potential co-occurring respirable fibres. Real-time monitoring shall be undertaken during mechanical disturbance works by a stationary light-scattering laser photometer (as proposed to be a TSI Dusttrak) as set to measure particulates in the PM_{10} size fraction. Representative continuous monitoring shall be undertaken through the course of a workday at representative locations in proximity of the active soil disturbance works at the boundary of the worksite. The level of PM_{10} shall be interpreted as a daily averaged sample, with consideration to peaks or significant

exceedances above the criteria during the monitoring period which may be interpreted as being directly associated with site activities.

A criterion of 50 µg/m^3 of PM_{10} shall be adopted as the action level for the site works, consistent with the standard for the average PM_{10} concentration during the period of one day provided in the national air quality standards (NEPC 2021). As a conservative measure, where this criterion is observed to be exceeded, immediate instruction shall be provided to revise air emission controls and review the specific work activities that are suspected to have resulted in the elevated PM_{10} levels.

The Dusttrak shall be operated by an appropriately trained environmental consultant or occupational hygienist. Daily dust monitoring reports are to be prepared following the monitoring period.

6.3 Visual Monitoring

Visual monitoring shall be undertaken by the person(s) in control of the work-site at regular periods throughout the works. It shall be ensured that visible dust emissions from the works are not visible at the boundary of the worksite. Where visual dust emissions are observed, then control measures shall be revised.

6.4 Dust Management

As per **Table 6.1** during any active ground disturbance works at the site dust levels shall be managed primarily by ensuring:

- Water sprays are used on the excavation areas, stockpiles and haulage pathways;
- Stockpiles will be either periodically wetted down or covered to control dusts;
- Haulage vehicles shall be covered and are to leave via the designated (stabilised) site access;
- Haulage vehicles and plant and equipment shall be washed down whenever they leave the asbestos work area; and
- Access roads are to be sufficiently maintained to ensure no visible dust at the site boundary.

Care should be taken to not over-wet excavations and/or stockpiles such that excess runoff is generated. If dust is visible at the boundary of the work area, then additional dust control measures shall be employed, which may include:

- Temporarily suspending activities until wind speeds reduce; and/or
- Additional use of water sprays or dust suppression mixtures.

Further dust management measures may be further instructed by monitoring results as generated by dust monitoring works undertaken in accordance with **Section 6.2**.

6.5 Odour Management

As discussed in **Section 3**, odours were not reported during recent site investigation works and are considered not to represent a significant potential source of odour emissions associated with the proposed Early and Main Works.

7. Conclusions and Recommendations

The AQA detailed herein for the proposed MHU and ED upgrade at the Broken Hill Base Hospital has involved the following scope work:

- Detailed review of previous investigations, site setting, environmental condition, surrounding land uses, known contamination status of the site, proposed development scenario was undertaken in accordance with the guidance documents listed in **Section 4**.
- Assessment of air quality impact was completed in accordance with relevant Environment Protection Authority guidelines and best practice industry guidance; and
- Potential sources of air and odour emissions were identified, as detailed in **Section 5.1**, principally associated with generation of dusts and the use of fuels (for equipment/plant etc.).

Based on the AQA detailed herein, and subject to the Limitations in **Section 8**, the following conclusions and recommendations are presented:

- *Could the works result in dust generation?*

The proposed redevelopment program for the MHU and ED upgrades are considered to be small with respect to the scale of construction and earthworks required. Nonetheless in the event that dust mitigation measures are not implemented the proposed construction and trackout activities are conservatively assessed as presenting a low risk for both dust soiling and human health impacts.

- *Could the works generate odours (during construction or operation)?*

Odours from fill and soils currently present on the site were not reported during recent JBS&G site investigation works. As such the proposed works are considered not to represent a significant potential source of odour emissions. While JBS&G is unable to comment on the odour generating potential of materials to be used for the new building construction, it is considered that odours from new building materials, if any, would be managed effectively under the CEMP for the project.

- *Will the works involve the use of fuel-driven heavy machinery or equipment?*

Under the proposed redevelopment plans, it is anticipated that plant/equipment utilised at the site will meet the minimum emissions standards outlined by the NSW EPA (required for registration), and standard construction requirements (i.e., documentation of plant maintenance and service history checklists etc.).

- *Are the works located in an area or adjacent to land uses (e.g. schools, nursing homes) that may be highly sensitive to dust, odours, or emissions?*

The site is located within the operational Broken Hill Base Hospital, which borders with low-density residential/commercial properties. Numerous potentially sensitive receptors exist in proximity of the site and primarily comprise staff and patients within the Broken Hill Hospital, staff and patrons of adjacent commercial properties; and residents of nearby low density houses.

- *Will the works have any adverse impact on air quality? Consider the cumulative air quality impacts, the surrounding sensitive receivers and the potential adverse effects that the activity may have on air quality.*

As discussed above, given that the proposed construction and earthworks are temporary and small in scale, JBS&G consider potential sources of air emissions that are likely to occur will be limited to dust emissions. Based on JBS&G's previous experience these potential dust emissions that may occur during the redevelopment program can be adequately managed via implementation of appropriate controls and monitoring of air quality impacts detailed in **Section 6**.

8. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

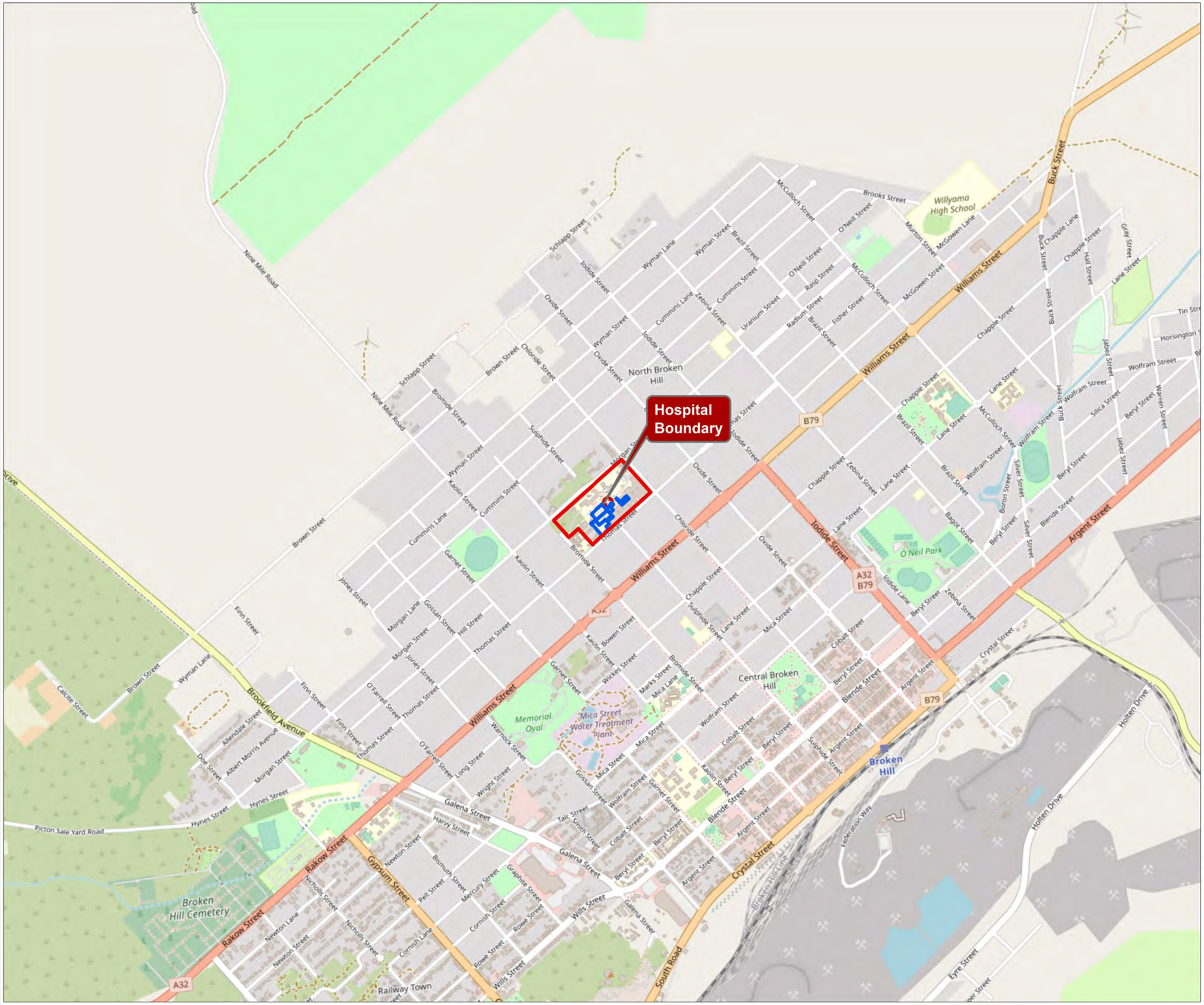
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend:

- Broken Hill Hospital Boundary
- Broken Hill Hospital Redevelopment (the site)

JBS&G

Job No: 63879

Client: Health Infrastructure

Version: R06 Rev 0	Date 6/10/2023
Drawn By: LJ	Checked By: MH

Scale 1:25,000

0 250 500

metres

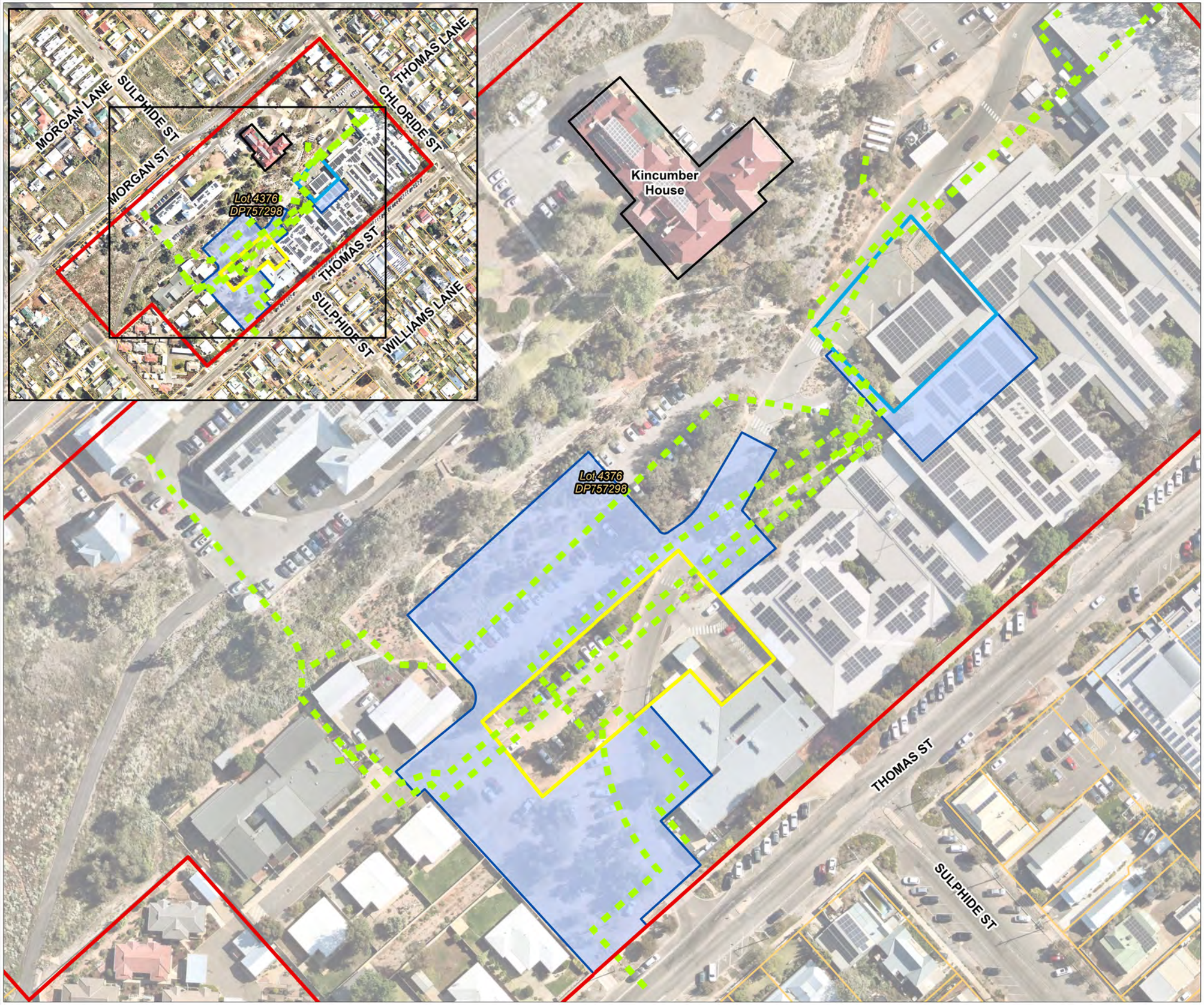
Coord. Sys. GDA 1994 MGA Zone 56

170-320 Thomas Street
Broken Hill, NSW

SITE LOCATION

FIGURE 1

File Name: 63879_BrokenHill_R06_Rev0



Legend:

- Broken Hill LHD
- NSW Cadastre
- ED Refurbishment and Expansion
- MHU Expansion Opportunities
- New Areas Added Post Assessment, Data Gaps, Require Further Assessment
- Kincumber House

Site Feature

- Early Works Stage

JBS&G

Job No: 63879

Client: Health Infrastructure

Version: R06 Rev 0	Date 6/10/2023
Drawn By: LJ	Checked By: MH

Scale 1:1,500

0 10 20

metres

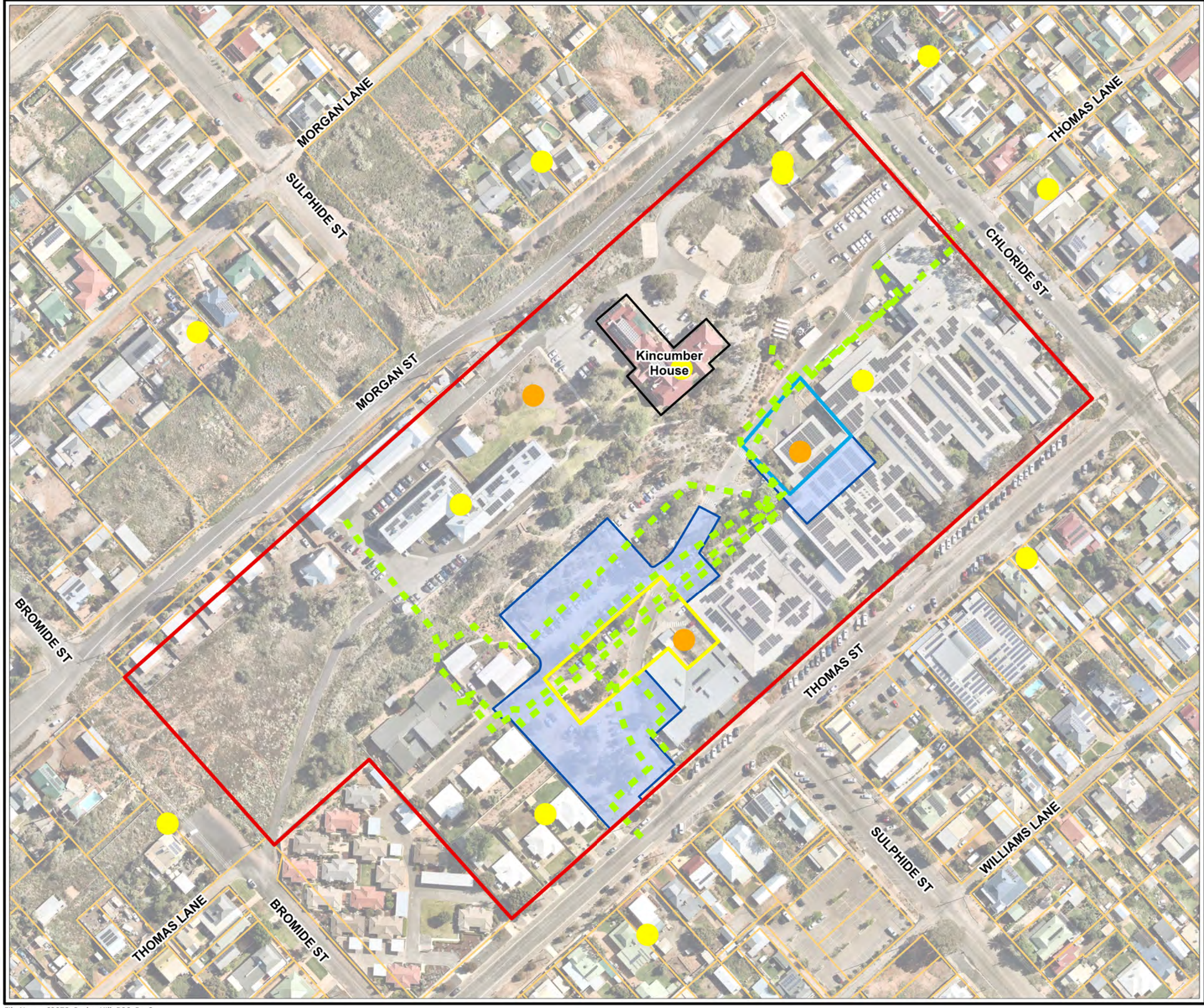
Coord. Sys. GDA 1994 MGA Zone 56

170-320 Thomas Street
Broken Hill, NSW

SITE LAYOUT

FIGURE 2

File Name: 63879_BrokenHill_R06_Rev0
Reference: Nearmap www.nearmap.com 20221017



Legend:

- Broken Hill LHD
- NSW Cadastre
- ED Refurbishment and Expansion
- MHU Expansion Opportunities
- New Areas Added Post Assessment, Data Gaps, Require Further Assessment
- Kincumber House

Site Feature

- Early Works Stage

Sensitive Receptors

- Potential Off-Site Receptor
- Potential On-Site Receptor

JBS&G

Job No: 63879

Client: Health Infrastructure

Version: R06 Rev 0	Date 6/10/2023
Drawn By: LJ	Checked By: MH

Scale 1:2,500

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 56

170-320 Thomas Street
Broken Hill, NSW

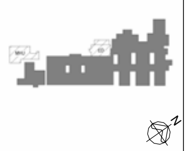
SENSITIVE RECEPTORS

FIGURE 3

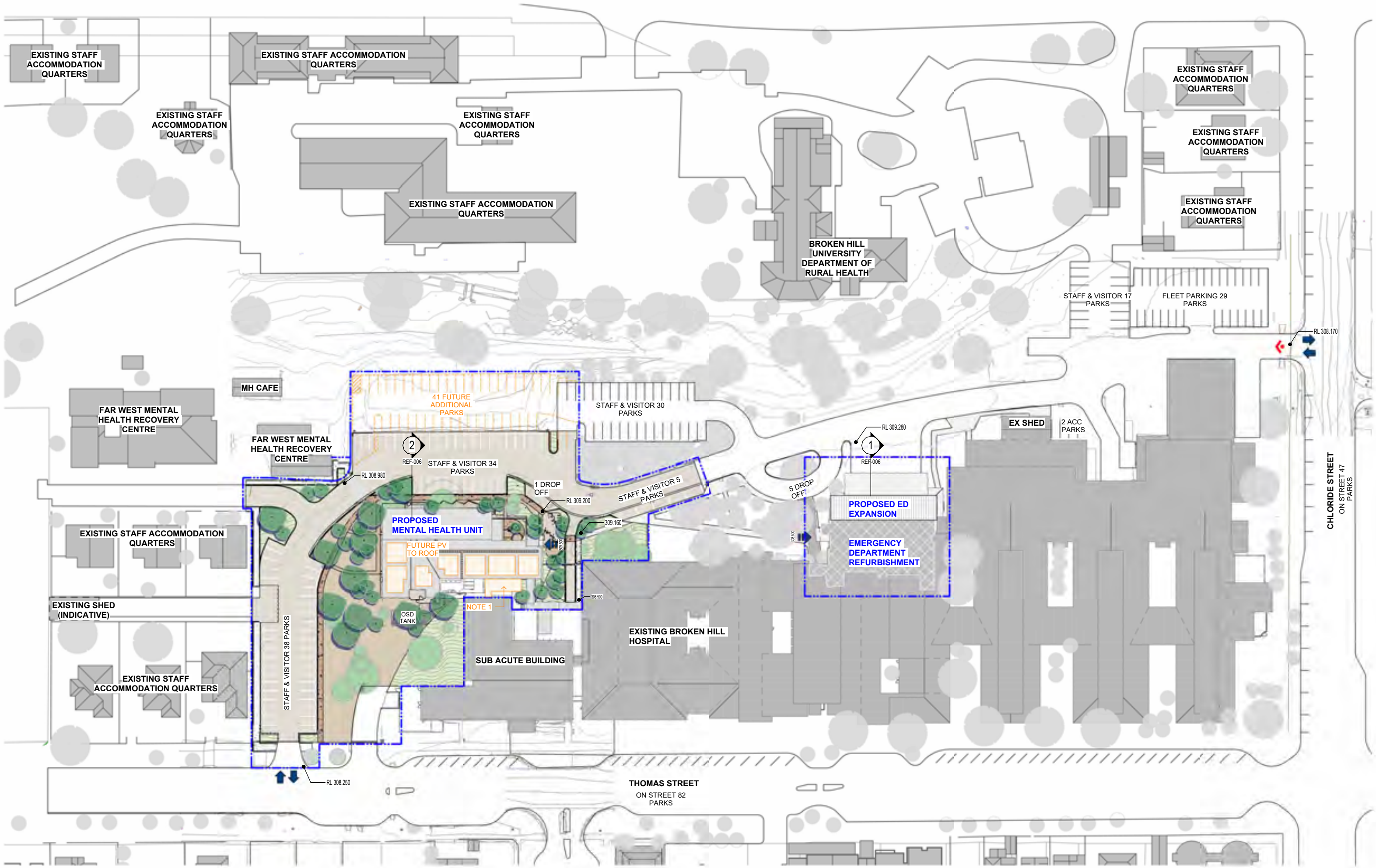
File Name: 63879_BrokenHill_R06_Rev0
Reference: Nearmap www.nearmap.com 20221017

Appendix A Conceptual Design Plans

KEY PLAN



REV	DESCRIPTION	DRN	DATE
1	REF SUBMISSION	MT	18/08/23



LEGEND

- EXTENT OF WORKS
- EXISTING TO REMAIN
- PROPOSED/MODIFIED LANDSCAPING REFER TO LANDSCAPE & CIVIL DOCUMENTS FOR DETAILS
- PEDESTRIAN ENTRANCE
- VEHICLE SITE ACCESS
- AMBULANCE ENTRANCE
- NOTE 1 FUTURE ENCLOSED LINK TO EXISTING SUB ACUTE BUILDING

TOTAL ON-SITE LONG TERM PARKING (LOWER CAMPUS):

EXISTING CAR SPACES:	**155**
PROPOSED TOTAL CAR SPACES:	**155**
TOTAL FUTURE CAR SPACE (STAGE 2):	**196**

LANDSCAPING:

PROPOSED TREES (STAGE 1):	**48**
FUTURE PROPOSED TREES (STAGE 2):	**36**
RATIO OF TOTAL PROPOSED TO REMOVED TREES IS APPROXIMATELY:	**1.16 : 1**

DIMENSIONS

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FIXTURES, FITTINGS & EQUIPMENT SPECIFICATIONS

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CLIENT

NSW GOVERNMENT | Health Infrastructure

PROJECT

BROKEN HILL ACUTE ADULT MENTAL HEALTH UNIT AND EMERGENCY DPT

176 Thomas Street
Broken Hill NSW 2880

DRAWING TITLE

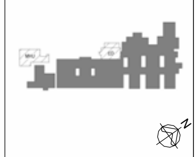
SITE PLAN

SCALE	DRAWN BY	CHECKED
1 : 500@A0	MT	EH

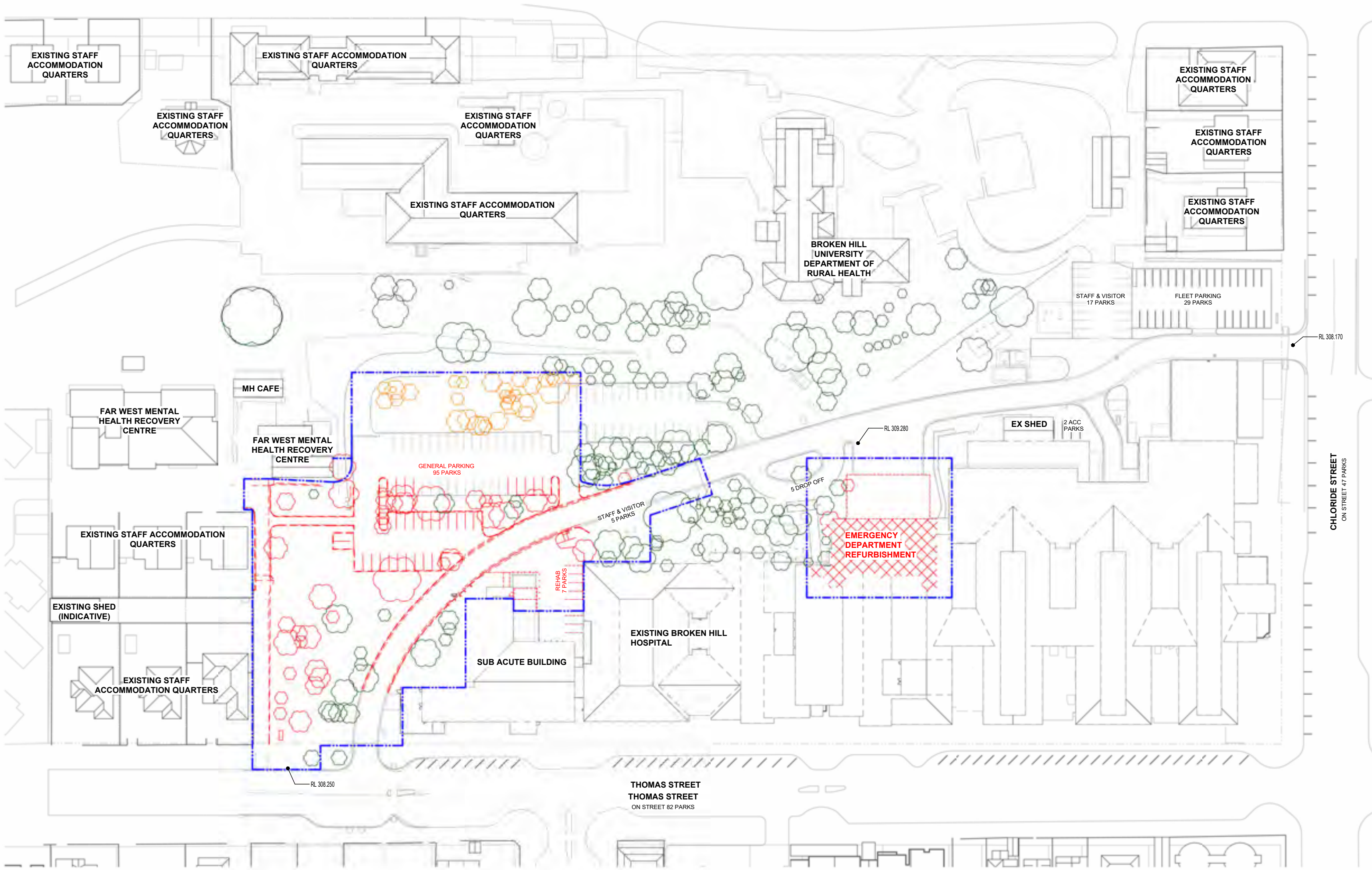
PROJECT No	DRAWING No	REVISION
10600	STH-AR-DWG-REF-004	1

Autodesk Docs://10600.00_Broken Hill BHHD MHU & ED/BHHD-MHU-ED_BUILDING_A22.rvt

KEY PLAN



REV	DESCRIPTION	DRN	DATE
1	REF SUBMISSION	MT	18/08/23



LEGEND

- DEMOLITION WORKS
- EXISTING TO REMAIN
- TREES TO BE RETAINED
- STAGE 1 TREES TO BE REMOVED
- STAGE 2 TREES TO BE REMOVED

TOTAL ON-SITE LONG TERM PARKING (LOWER CAMPUS):

EXISTING CAR SPACE:	155 SPACES
EXISTING CAR SPACE TO BE DEMOLISHED:	38 SPACES

LANDSCAPING:

EXISTING TREES TO BE REMOVED (STAGE 1):	38 TREES
EXISTING TREES TO BE REMOVED (STAGE 2):	31 TREES
TOTAL EXISTING TREES TO BE RETAINED:	144 TREES

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NSW GOVERNMENT | Health Infrastructure

PROJECT

BROKEN HILL ACUTE ADULT MENTAL HEALTH UNIT AND EMERGENCY DPT

176 Thomas Street
Broken Hill NSW 2880

DRAWING TITLE

DEMOLITION SITE PLAN

SCALE	DRAWN BY	CHECKED
1 : 500@A0	MT	EH

PROJECT No	DRAWING No	REVISION
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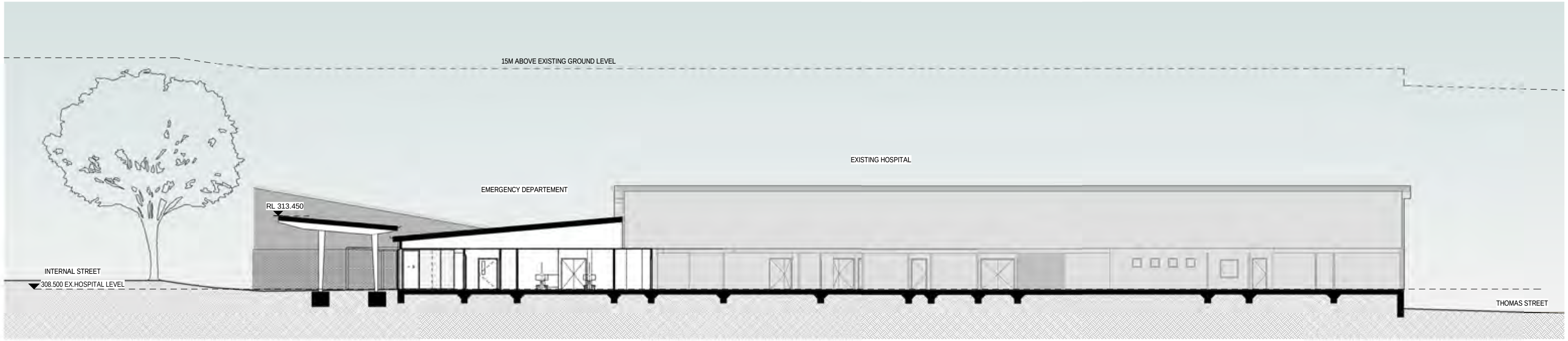
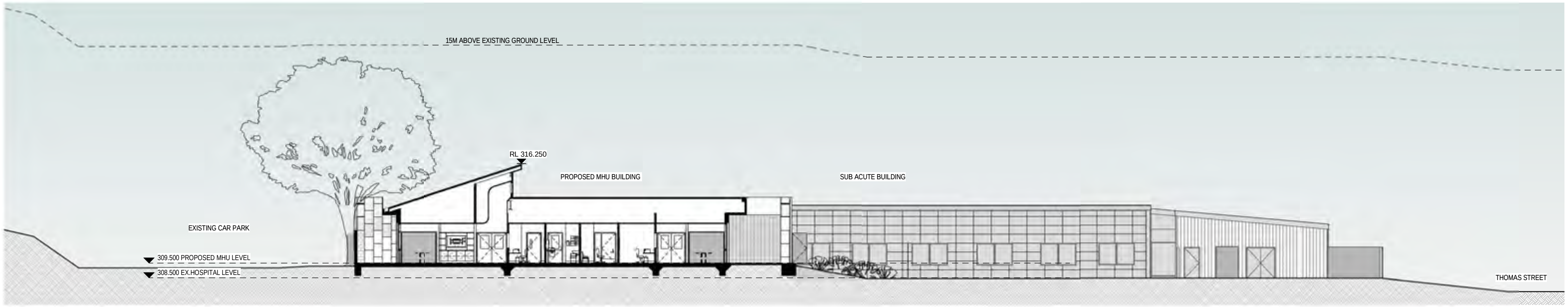
Autodesk Docs://10600.00_Broken Hill BHHD MHU & ED/BHHD-MHU-ED_BUILDING_A22.rvt

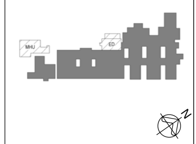


1 SITE SECTION - ED - NORTH/SOUTH
SCALE: 1 : 100



2 SITE SECTION - MHU - NORTH/SOUTH
SCALE: 1 : 100

KEY PLAN



REV	DESCRIPTION	DRN	DATE
1	REF SUBMISSION	MT	18/08/23

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NSW GOVERNMENT | Health Infrastructure

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176 Thomas Street
Broken Hill NSW 2880

DRAWING TITLE
SITE SECTIONS

SCALE	DRAWN BY	CHECKED
1 : 100@A0	MT	EH

PROJECT No	DRAWING No	REVISION
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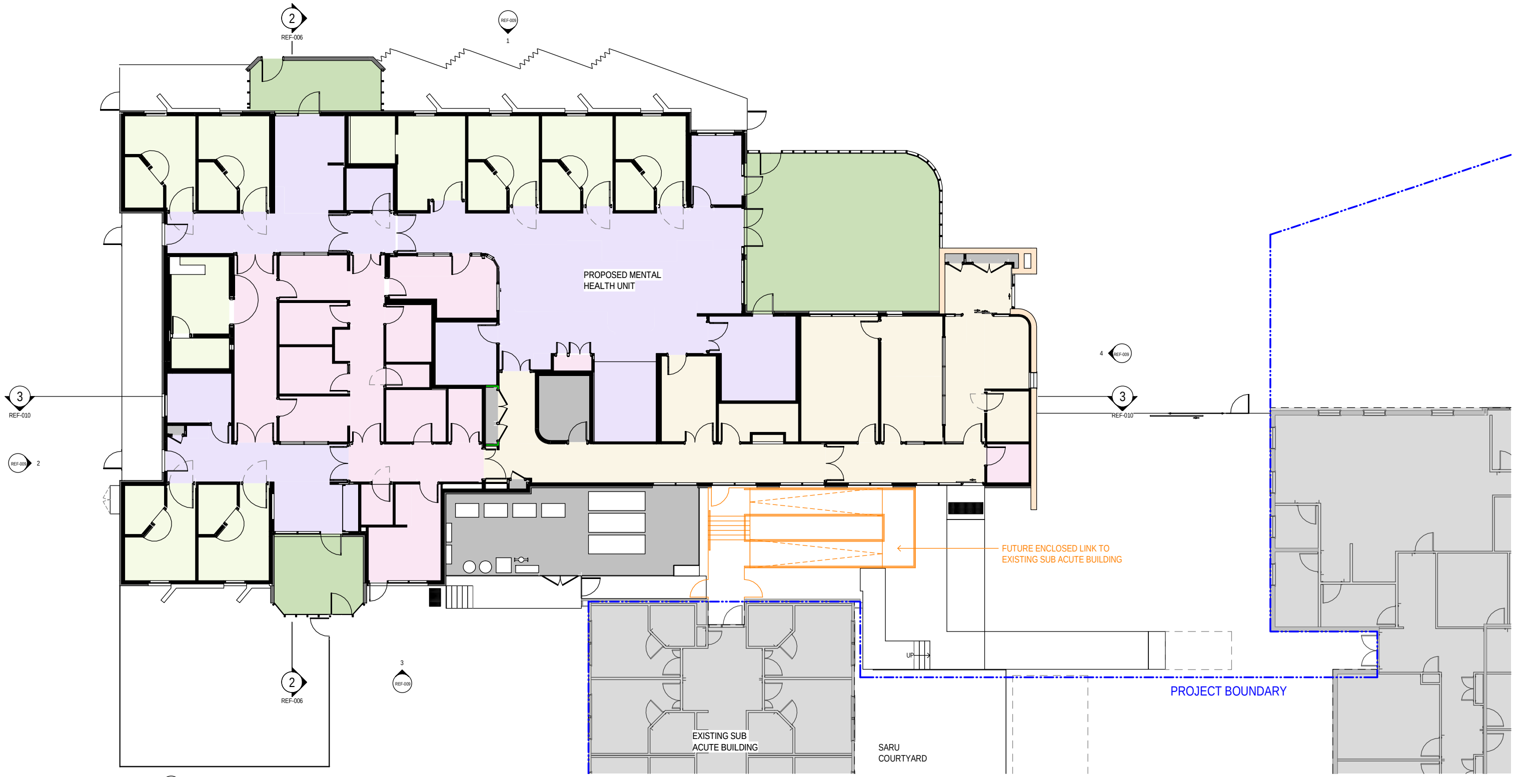
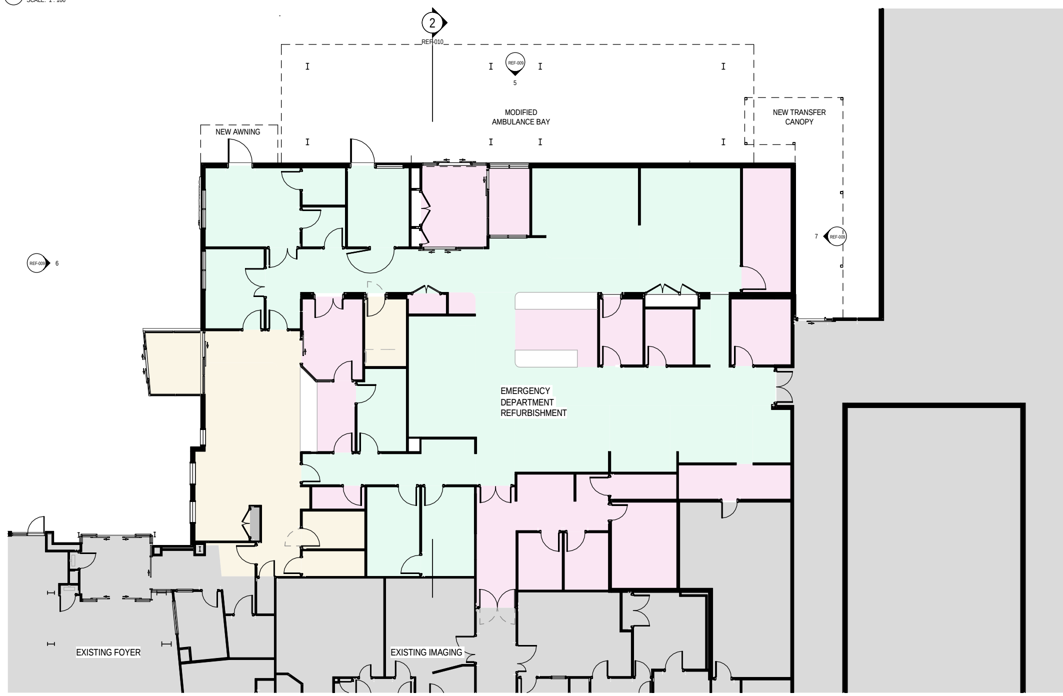
Autodesk Docs://10600.00_Broken Hill BHHD MHU & ED/BHHD-MHU-ED_BUILDING_A22.rvt

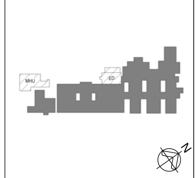


1 GENERAL ARRANGEMENT - GROUND FLOOR - MHU
SCALE: 1 : 100



2 GENERAL ARRANGEMENT - GROUND FLOOR - EMERGENCY DEPARTMENT
SCALE: 1 : 100

KEY PLAN



REV	DESCRIPTION	DRN	DATE
1	REF SUBMISSION	MT	18/08/23

LEGEND

- ENTRY / WAITING / RECEPTION
- INPATIENT UNIT
- STAFF / CLINICAL SUPPORT
- ACTIVITY & RECREATION
- COURTYARDS
- TREATMENT

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CLIENT

NSW GOVERNMENT | Health Infrastructure

PROJECT

BROKEN HILL ACUTE ADULT MENTAL HEALTH UNIT AND EMERGENCY DPT

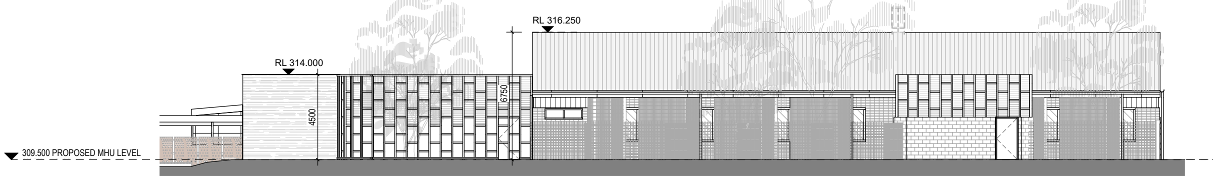
176 Thomas Street
Broken Hill NSW 2880

DRAWING TITLE

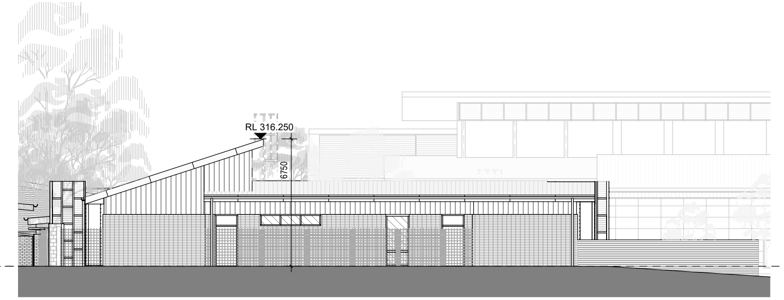
GENERAL ARRANGEMENT PLAN - GROUND

SCALE	DRAWN BY	CHECKED
As indicated@A0	CJ	EH

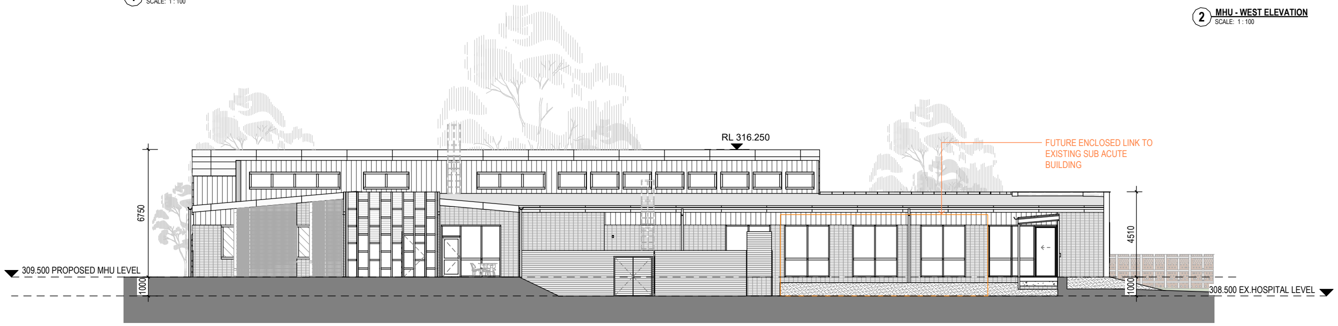
PROJECT No	DRAWING No	REVISION
10600	STH-AR-DWG-REF-007	1



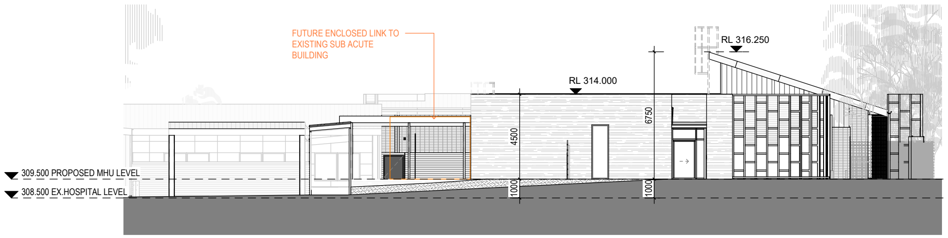
1 MHU - NORTH ELEVATION
SCALE: 1 : 100



2 MHU - WEST ELEVATION
SCALE: 1 : 100

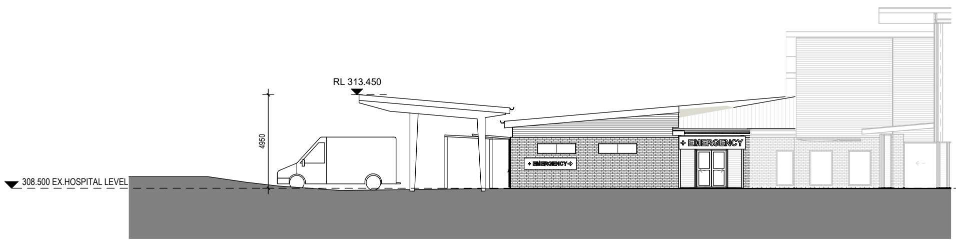


3 MHU - SOUTH ELEVATION
SCALE: 1 : 100

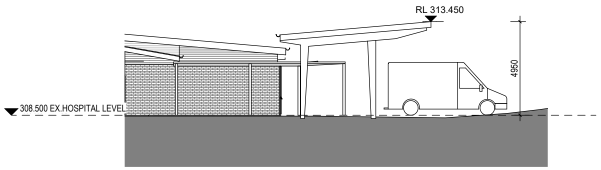


4 MHU - EAST ELEVATION
SCALE: 1 : 100

5 ED - NORTH ELEVATION
SCALE: 1 : 100

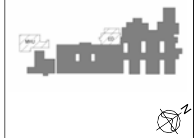


6 ED - WEST ELEVATION
SCALE: 1 : 100



7 ED - EAST ELEVATION
SCALE: 1 : 100

KEY PLAN



REV	DESCRIPTION	DRN	DATE
1	REF SUBMISSION	MT	18/08/23

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CLIENT
NSW GOVERNMENT | Health Infrastructure

PROJECT
BROKEN HILL ACUTE ADULT MENTAL HEALTH UNIT AND EMERGENCY DPT
176 Thomas Street
Broken Hill NSW 2880

DRAWING TITLE
BUILDING ELEVATIONS

SCALE	DRAWN BY	CHECKED
1 : 100@A0	CJ	EH

PROJECT No	DRAWING No	REVISION
10600	STH-AR-DWG-REF-009	1

Autodesk Docs://10600.00_Broken Hill BHHD MHU & ED/BHHD-MHU-ED_BUILDING_A22.rvt

Appendix B Lotsearch Report (2022)

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 29 Nov 2022 09:51:16

Reference: LS038494 EP

Address: Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Customer Service - Spatial Services	04/11/2022	04/11/2022	Quarterly	-	-	-	-
Topographic Data	NSW Department of Customer Service - Spatial Services	22/08/2022	22/08/2022	Annually	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	08/11/2022	14/10/2022	Monthly	1000m	0	0	0
Contaminated Land Records of Notice	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	0
Former Gasworks	Environment Protection Authority	02/09/2022	14/07/2021	Quarterly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/08/2022	13/07/2012	Annually	1000m	0	0	1
EPA PFAS Investigation Program	Environment Protection Authority	08/11/2022	23/09/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	09/11/2022	09/11/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	02/09/2022	02/09/2022	Quarterly	2000m	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	16/02/2022	13/12/2018	Annually	1000m	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	0
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	1	1	1
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	31/10/2022	31/10/2022	Monthly	1000m	0	0	3
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150m	2	29	43
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150m	-	118	123
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500m	0	0	7
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500m	-	2	11
Points of Interest	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	4	5	34
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	4
Tanks (Points)	NSW Department of Customer Service - Spatial Services	19/10/2022	19/10/2022	Quarterly	1000m	0	0	0
Major Easements	NSW Department of Customer Service - Spatial Services	15/11/2022	15/11/2022	Quarterly	1000m	0	0	7
State Forest	Forestry Corporation of NSW	16/08/2022	14/08/2022	Annually	1000m	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	10/02/2022	31/12/2021	Annually	1000m	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	29/08/2022	19/08/2019	Annually	1000m	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	28/03/2022	23/02/2018	Annually	1000m	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology; Water NSW	24/01/2022	24/01/2022	Annually	2000m	0	0	15

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
NSW Seamless Geology Single Layer: Rock Units	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	2	2	5
NSW Seamless Geology – Single Layer: Trendlines	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
NSW Seamless Geology – Single Layer: Geological Boundaries and Faults	Department of Regional NSW	17/02/2022	01/05/2021	Annually	1000m	0	0	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000m	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000m	1	1	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	09/11/2022	28/10/2022	Monthly	500m	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000m	0	0	0
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	09/11/2022	09/11/2022	Quarterly	1000m	0	0	0
Current Mining Titles	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	0	0	0
Mining Title Applications	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	0	0	0
Historic Mining Titles	NSW Department of Industry	09/11/2022	09/11/2022	Monthly	1000m	1	1	1
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	15/11/2021	07/12/2018	Monthly	1000m	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	15/11/2021	05/11/2021	Monthly	1000m	1	1	9
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000m	1	1	1
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	18/10/2022	01/07/2022	Quarterly	1000m	0	0	2
Environmental Planning Instrument Local Heritage	NSW Department of Planning, Industry and Environment	09/11/2022	28/10/2022	Monthly	1000m	1	4	29
Bush Fire Prone Land	NSW Rural Fire Service	28/11/2022	25/10/2022	Weekly	1000m	0	0	2
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	1	1
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	28/10/2022	26/10/2022	Annually	1000m	0	1	1
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	22/11/2022	22/11/2022	Weekly	10000m	-	-	-

Site Diagram

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 86172m²

Total Perimeter: 1.3km

Scale: 0 25 50 100 Meters

Data Source Aerial Imagery: © Aerometrex Pty Ltd

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: 29 November 2022

Contaminated Land

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

List of NSW contaminated sites notified to EPA

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

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

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority

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

Former Gasworks

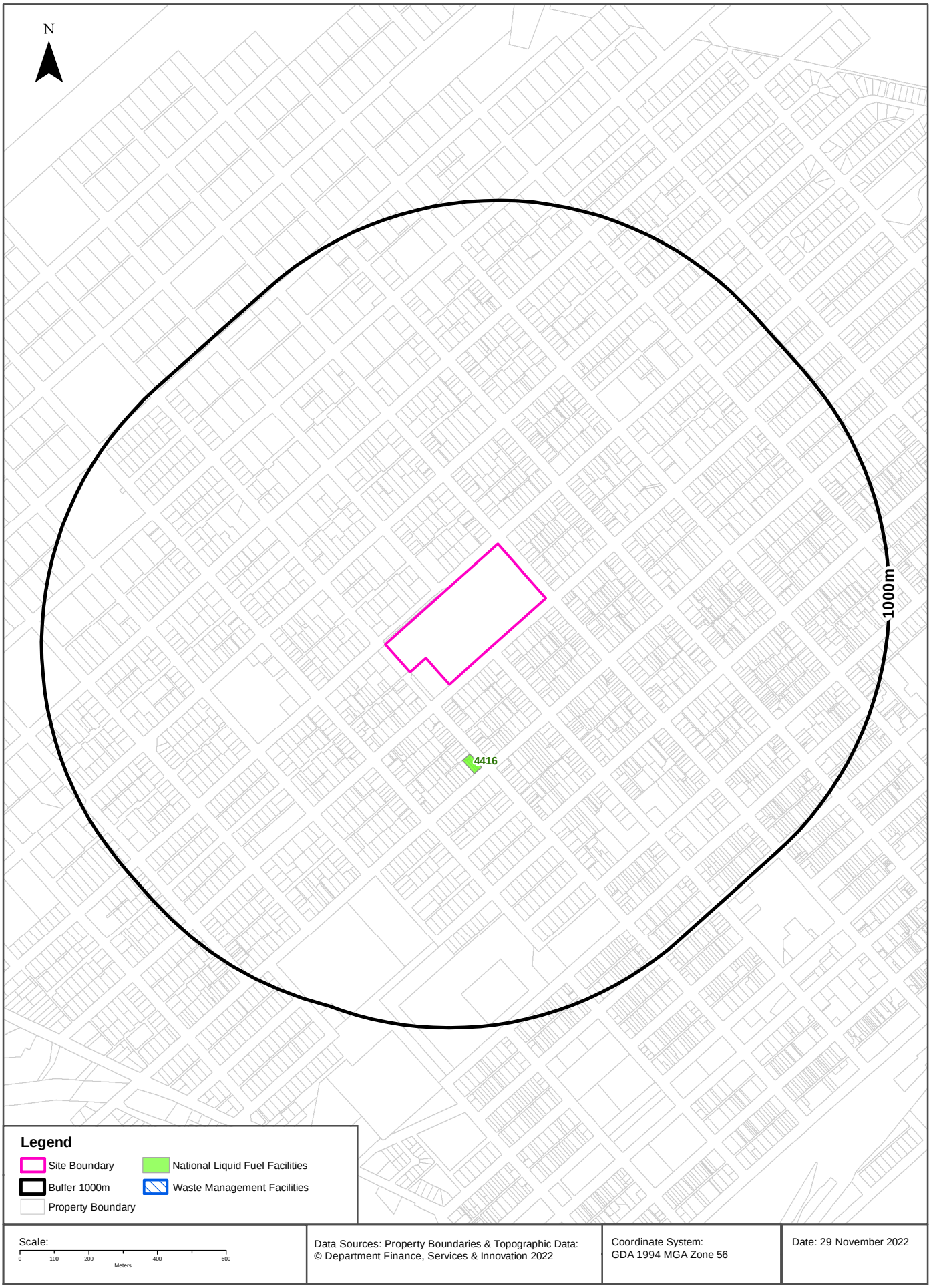
Former Gasworks within the dataset buffer:

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

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Waste Management & Liquid Fuel Facilities

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

National Waste Management Site Database

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

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

Waste Management Facilities Data Source: Geoscience Australia

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist	Direction
4416	Shell	Coles Express Broken Hill	162-166 Williams Street	Broken Hill	Petrol Station	Operational		25/07/2011	Premise Match	211m	South

National Liquid Fuel Facilities Data Source: Geoscience Australia

PFAS Investigation & Management Programs

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

EPA PFAS Investigation Program

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

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

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

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

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

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

Defence PFAS Management Program

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

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

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

Airservices Australia National PFAS Management Program

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

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

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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

EPA Activities

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

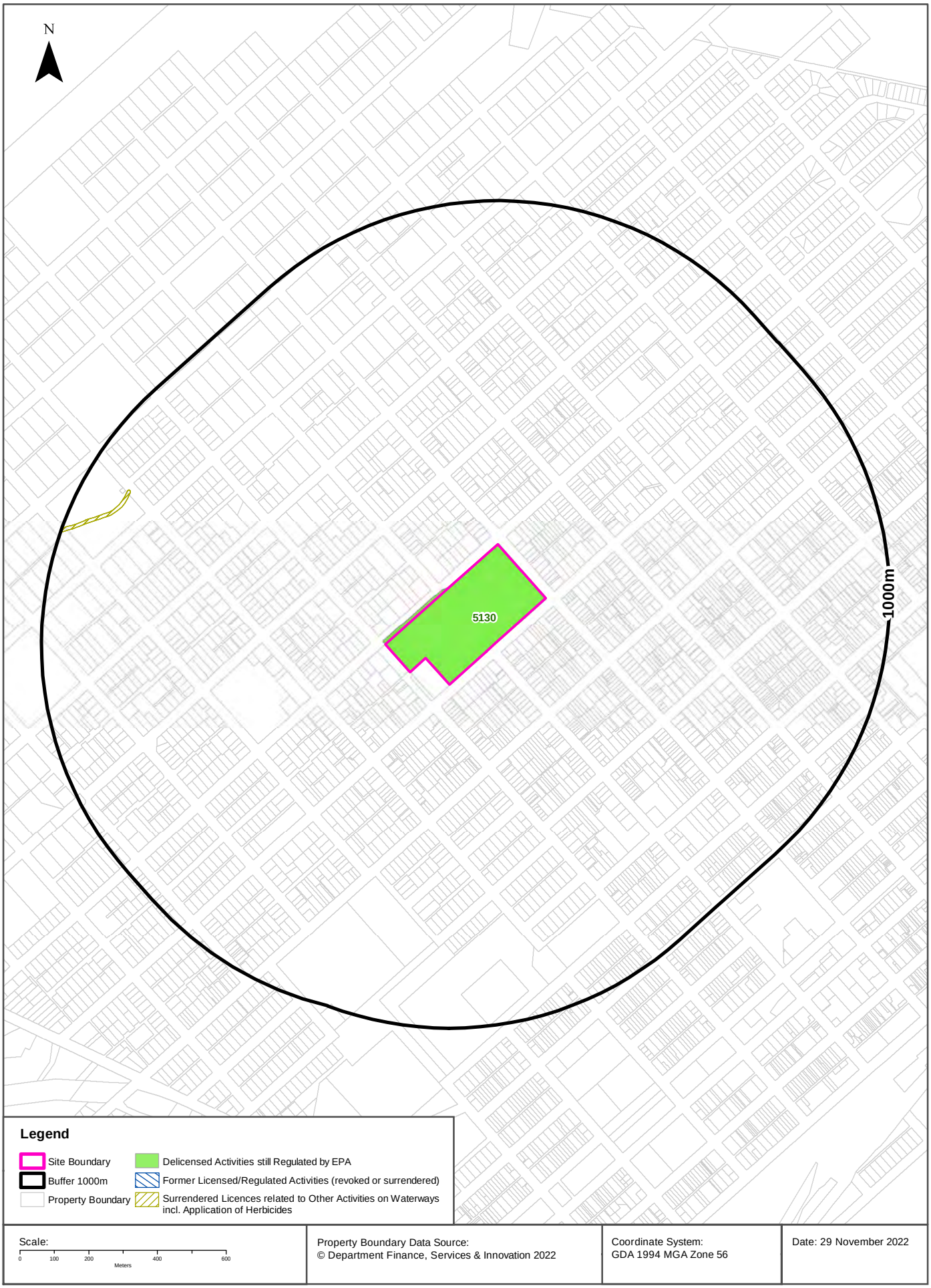
Licensed Activities under the POEO Act 1997

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
N/A	No records in buffer							

Delicensed & Former Licensed EPA Activities

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



EPA Activities

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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
5130	GREATER WESTERN AREA HEALTH SERVICE	BROKEN HILL BASE HOSPITAL	THOMAS STREET	BROKEN HILL	Hazardous, Industrial or Group A Waste Generation or Storage	Premise Match	0m	On-site

Delicensed Activities Data Source: Environment Protection Authority

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

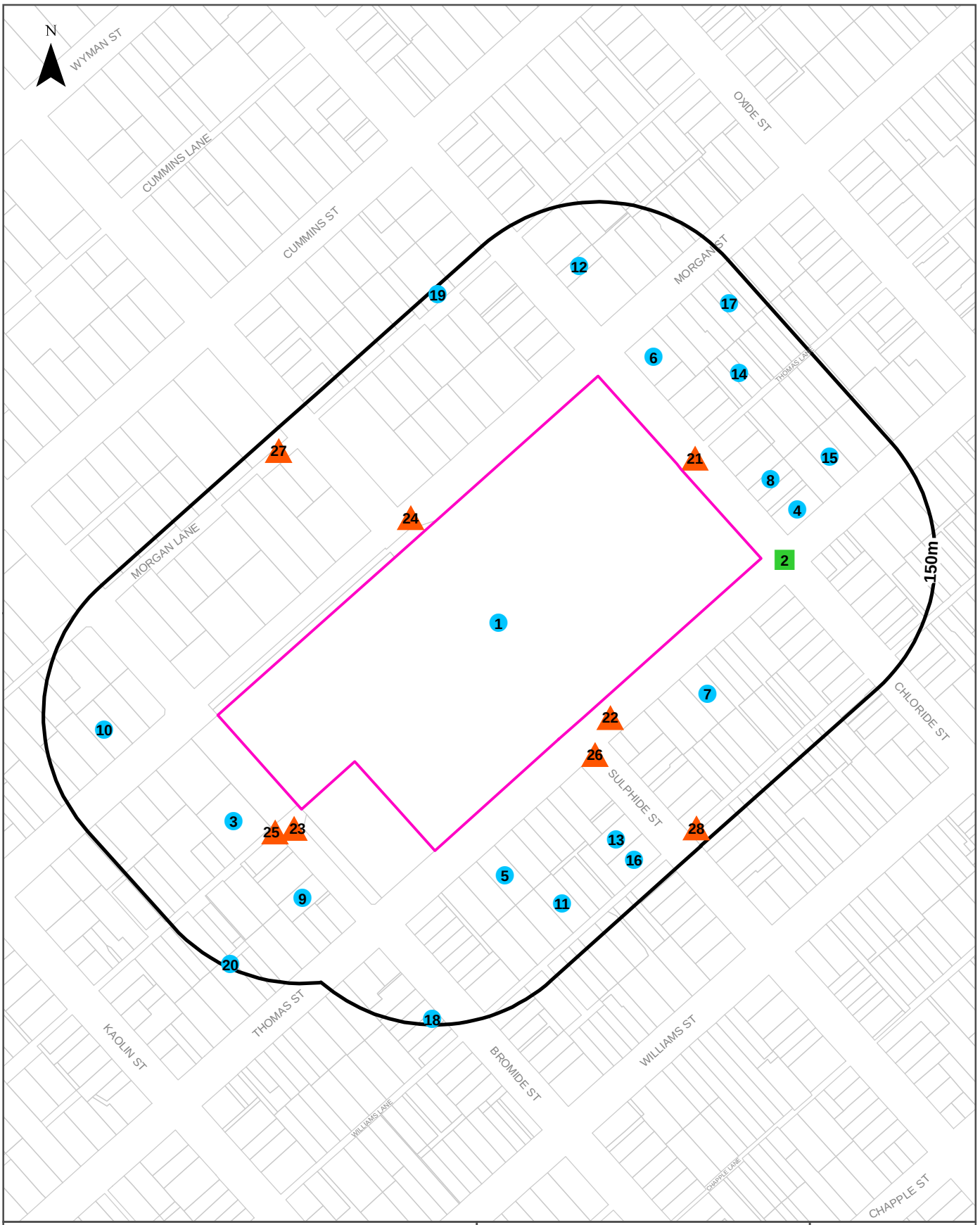
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	862m	West
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	862m	West
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	862m	West

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



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 60 120 180 240 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 November 2022

Historical Business Directories

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 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	HOSPITALS &/OR NURSING HOMES.	Broken Hill & District Hospital, 174 Thomas St. Broken Hill (N.S.W.)	168772	1991	Premise Match	0m	On-site
	HOSPITALS, NURSING HOMES, Etc.	Broken Hill & District Hospital, 170 Thomas St. Broken Hill 2880	601158	1970	Premise Match	0m	On-site
2	GROCERS & GENERAL STOREKEEPERS	Reed, W. R. (Bill), Cnr. Chloride & Thomas Sts., Broken Hill	191374	1961	Road Intersection	21m	East
	DEEP FROZEN FOODS-RETAIL	Reed, W. R. (Bill), Cnr. Chloride and Thomas Sts., Broken Hill	191044	1961	Road Intersection	21m	East
	MILK BARS & CONFECTIONERY SHOPS	Reed, W. R., Cnr, Chloride & Thomas Sts., Broken Hill	191832	1961	Road Intersection	21m	East
	FRUITERERS & GREENGROCERS	Reed, W. R., Cnr. Chloride & Thomas Sts., Broken Hill	191271	1961	Road Intersection	21m	East
	GIFT SHOPS & FANCY GOODS	Reed, W. R., Cnr. Chloride & Thomas Sts., Broken Hill	191295	1961	Road Intersection	21m	East
	DRAPERS	Reed, W. R., Cnr. Chloride and Thomas Sts., Broken Hill	191105	1961	Road Intersection	21m	East
3	LAUNDRIES SELF SERVICE &/OR LAUNDRETTES.	Broken Hill Laundry, 337 Bromide St, Broken Hill (N.S.W.)	168863	1991	Premise Match	30m	South West
	LAUNDRIES	Broken Hill Laundry Pty. Ltd., 337 Bromide St. Broken Hill 2880	601260	1970	Premise Match	30m	South West
4	BOOK EXCHANGES.	Book Exchange, 320 Chloride St. Broken Hill (N.S.W.)	168263	1991	Premise Match	31m	East
	DELICATESSENS.	W Book Exchange, 320 Chlonde St. Broken Hill (N.S.W.)	168500	1991	Premise Match	31m	East
	JUSTICES OF THE PEACE	Dell, T. F. K., 320 Chloride St., Broken Hill	191637	1961	Premise Match	31m	East
	MIXED BUSINESSES	Boyce, H. R., 320 Chloride St. Broken Hill	152570	1950	Premise Match	31m	East
	MIXED BUSINESSES	Reid, W. R., 320 Chloride St. Broken Hill	152617	1950	Premise Match	31m	East
5	MARINE DEALERS	Clark, H. F., 169 Thomas St., Broken Hill	191797	1961	Premise Match	31m	South
	MARINE DEALERS	Clark, H. F., 169 Thomas St. Broken Hill	152428	1950	Premise Match	31m	South
6	DOCTORS	Hiller, G. and O., 319 Morgan St., Broken Hill	191083	1961	Premise Match	31m	North East
7	DOCTORS	Schlink, F. & Roberts, I. C., 239 Thomas St., Broken Hill	366570	1961	Premise Match	31m	East
8	ELECTRICAL CONTRACTORS & ELECTRICIANS	Smith, Dale, 326 Chloride St., Broken Hill	191163	1961	Premise Match	31m	North East
9	HOT WATER INSTALLATIONS & MAINTENANCE	Stokes Bros., 323 Bromide St., Broken Hill	191480	1961	Premise Match	57m	South West
10	ELECTRICAL CONTRACTORS.	Sevan. B. W, 146 Morgan St.. Broken Hill (N.S.W.)	168554	1991	Premise Match	77m	West
11	JUSTICES OF THE PEACE	Barnwell, H. D., 174 William Lane, Broken Hill	191607	1961	Premise Match	81m	South
12	MUSIC TEACHERS	Tweddell, Muriel, 344 Chloride St. Broken Hill	152726	1950	Premise Match	81m	North
13	JUSTICES OF THE PEACE	Owens, Mrs. L. M., 299 Sulphide St., Broken Hill	191714	1961	Premise Match	86m	South East
14	SHEARING CONTRACTORS & SHEARERS	Flavel, C. H., 324 Thomas Lane Broken Hill 2880	601622	1970	Premise Match	87m	North East

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
14	SHEARING CONTRACTORS	Flavel, C. H., 324 Thomas Lane, Broken Hill	192213	1961	Premise Match	87m	North East
	SHEARING CONTRACTORS	Flavel, C. H., 324 Thomas Lane., Broken Hill	154050	1950	Premise Match	87m	North East
15	JUSTICES OF THE PEACE	Pearce, H. C., 324 Thomas St., Broken Hill	191717	1961	Premise Match	92m	North East
16	MIXED BUSINESSES	King, E. M., 295 Sulphide St., Broken Hill	191870	1961	Premise Match	108m	South East
	MIXED BUSINESSES	King, E. M., 295 Sulphide St. Broken Hill	152603	1950	Premise Match	108m	South East
17	MOTOR GARAGES & SERVICE STATIONS.	R.J.O. Automotive & General Engineering, 331 Morgan St.. Broken Hill (N.S.W.)	169007	1991	Premise Match	119m	North East
	MOTOR ENGINE RECONDITIONING	Datson, M. G., 331 Morgan St. Broken Hill 2880	601379	1970	Premise Match	119m	North East
	ENGINEERS-GENERAL, MECHANICAL & MANUFACTURING	Datsun, M. G., 331 Morgan St. Broken Hill 2880	600961	1970	Premise Match	119m	North East
	MOTOR ACCESSORIES & SPARE PARTS-RETAIL	Datson, M, G., 331 Morgan St., Broken Hill	191911	1961	Premise Match	119m	North East
	ENGINEERS-AUTOMOTIVE	Datson, M. G., 331 Morgan St., Broken Hill	191180	1961	Premise Match	119m	North East
	ENGINEERS-GENERAL, MECHANICAL & MFRG.	Datson, M. G., 331 Morgan St., Broken Hill	191199	1961	Premise Match	119m	North East
	MOTOR ENGINEERS-AUTOMOTIVE	Datson, M. G., 331 Morgan St., Broken Hill	191964	1961	Premise Match	119m	North East
18	JUSTICES OF THE PEACE	Harris, G. D., 293 Bromide St., Broken Hill	191652	1961	Premise Match	137m	South
	JUSTICES OF THE PEACE	Hooper, R. J., 293 Bromide St., Broken Hill	191657	1961	Premise Match	137m	South
19	TANK-SINKING CONTRACTORS	Clowser, A., 242 Morgan Lane Broken Hill	154109	1950	Premise Match	139m	North
20	BRICKLAYERS.	Tormena. C, 142 Thomas St.. Broken Hill (N.S.W.)	168280	1991	Premise Match	142m	South West
	BUILDERS &/OR BUILDING CONTRACTORS.	Tormena. C, 142 Thomas St.. Broken Hill (N.S.W.)	168294	1991	Premise Match	142m	South West

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 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
21	GIFT SHOPS.	Before You Go, 13 Chloride St.. Broken Hill (N.S.W.)	168634	1991	Road Match	0m
	MUSICAL INSTRUMENT &/OR SHEET MUSIC DEALERS.	Broken HHI Music, 3 Chloride St. Broken Hill (N.S.W.)	169049	1991	Road Match	0m
	CLUBS &/OR SPORTING BODIES.	Broken Hill Club, 1 Chloride St.. Broken Hill (N.S.W.)	168431	1991	Road Match	0m
	CLUBS &/OR SPORTING BODIES.	Broken Hill R.S.L Club Ltd. The, 2 Chloride St.. Broken Hill (N.S.W.)	168437	1991	Road Match	0m
	BARRISTERS.	Fitzpatrick Switt, 5 Chloride St. Broken Hill (N.S.W.)	168247	1991	Road Match	0m
	GOVERNMENT DEPARTMENTS	Telecom Australia, Chloride St, Broken Hill (N.S.W.)	168686	1991	Road Match	0m
	MEDICAL PRACTITIONERS,	Verrall, C, 5 Chloride St.. Broken Hill (N.S.W.)	168899	1991	Road Match	0m
	AIR SERVICE OPERATORS	Ansett A.N.A. Pty. Ltd., 3 Chloride St. Broken Hill 2880	600549	1970	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Broken Hill Aquatic Club, 1 Chloride St. Broken Hill 2880	600570	1970	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Broken Hill Club, Chloride St. Broken Hill 2880	600572	1970	Road Match	0m
	GOVERNMENT DEPARTMENTS	Forestry Commission of N.S.W., Chloride St. Broken Hill 2880	601059	1970	Road Match	0m
	ASSOCIATIONS, SOCIETIES, CLUBS & SPORTING BODIES	Greyhound Racing Club, 2 Chloride St. Broken Hill 2880	600594	1970	Road Match	0m
	SOLICITORS	Hudson, E. R., 5 Chloride St. Broken Hill 2880	601643	1970	Road Match	0m
	MOTOR BUS TOURS	Ansett Pioneer, Grand Hotel Bldg., Chloride St., Broken Hill	191939	1961	Road Match	0m
	TOURS-LOCAL	Ansett Pioneer, Grand Hotel Bldg., Chloride St., Broken Hill	192312	1961	Road Match	0m
	AIR SERVICES BOOKING AGENTS	Ansett/ANA., Chloride St., Broken Hill	267337	1961	Road Match	0m
	AIR & TOURIST SERVICE AGENTS	Ansett-A.N.A., Grand Hotel Bldg., Chloride St., Broken Hill	190606	1961	Road Match	0m
	AIR SERVICES	Ansett-A.N.A., Grand Hotel Bldg., Chloride St., Broken Hill	190615	1961	Road Match	0m
	CLUBS & SPORTING BODIES	Broken Hill Club, Chloride St., Broken Hill	190976	1961	Road Match	0m
	AIR & TOURIST SERVICE AGENTS	Butler Air Transport, Grand Hotel Bldg., Chloride St., Broken Hill	190607	1961	Road Match	0m
	AIR SERVICES	Butler Air Transport, Grand Hotel Bldg., Chloride St., Broken Hill	190616	1961	Road Match	0m
	CAFES, TEA ROOMS & COFFEE LOUNGES, ETC.	Coronet Coffee Lounge, 6 Chloride St., Broken Hill	190870	1961	Road Match	0m
	COFFEE LOUNGES	Coronet Coffee Lounge, 6 Chloride St., Broken Hill	191004	1961	Road Match	0m
	CARRIERS & CARTAGE CONTRACTORS	Meatheringham, G., Chloride St., Broken Hill	190905	1961	Road Match	0m
	ASSOCIATIONS & SOCIETIES	Returned Servicemen's Club, Chloride St., Broken Hill	190661	1961	Road Match	0m
	ELECTRICAL APPLIANCES & SUPPLIES-RETAIL	Rose, J. A., 2 Chloride St., Broken Hill	191146	1961	Road Match	0m
	ELECTRICAL APPLIANCES & SUPPLIES-WHOLESALE	Rose, J. A., 2 Chloride St., Broken Hill	191152	1961	Road Match	0m
	ENGINEERS-GENERAL, MECHANICAL & MFRG.	Rose, J. A., 2 Chloride St., Broken Hill	191202	1961	Road Match	0m

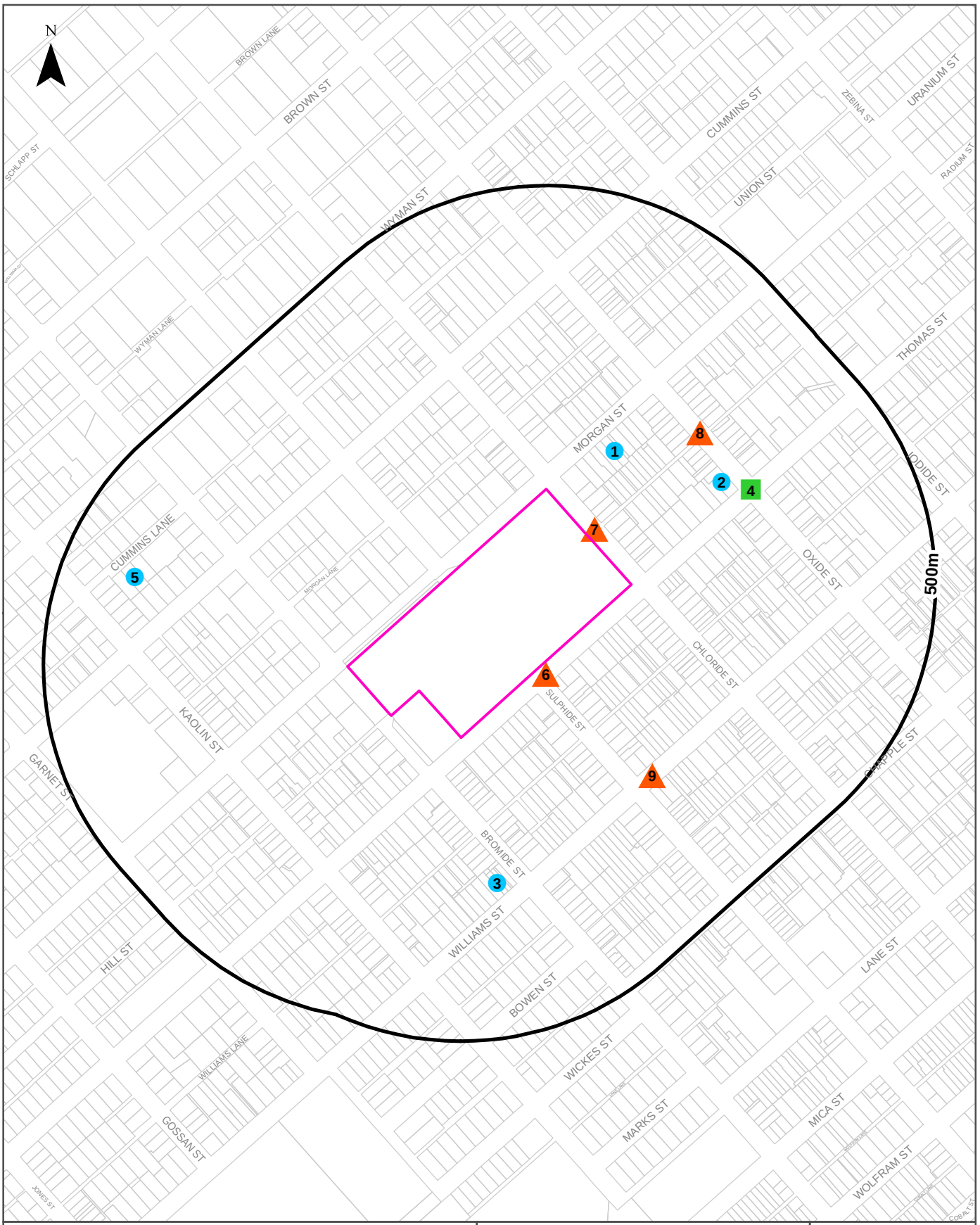
Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
21	REFRIGERATOR MERCHANTS-WHOLESALE	Rose, J. A., 2 Chloride St., Broken Hill	192183	1961	Road Match	0m
	WASHING MACHINE SALES & SERVICE	Rose, J. A., 2 Chloride St., Broken Hill	192366	1961	Road Match	0m
	DRY CLEANERS, DYERS & PRESSERS	Valetta Dry Cleaners, 6 Chloride St., Broken Hill	191122	1961	Road Match	0m
	FLOUR MILLERS	Adelaide Milling Co. Ltd., Chloride St. Broken Hill	152110	1950	Road Match	0m
	STOCK & STATION AGENTS	Bennett and Fisher Ltd., Chloride St. Broken Hill	154088	1950	Road Match	0m
	WOOLBROKERS	Bennett and Fisher Ltd., Chloride St. Broken Hill	154233	1950	Road Match	0m
	REFRIGERATOR DEALERS & SERVICEMEN	Brown, Reg, 2 Chloride St. Broken Hill	154018	1950	Road Match	0m
	ENGINEERS-REFRIGERATION	Brown, Reg, Chloride St. Broken Hill	152086	1950	Road Match	0m
	TAXI PROPRIETORS	Cook, C., Grand Taxi Stand, Chloride St. Broken Hill	154119	1950	Road Match	0m
	TAXI PROPRIETORS	Cook, Wm., Grand Taxi Stand, Chloride St. Broken Hill	154120	1950	Road Match	0m
	TAXI PROPRIETORS	Dannatt H., Grand Taxi Stand, Chloride St. Broken Hill	154121	1950	Road Match	0m
	GOVERNMENT DEPARTMENTS	Dept. of Mines, Chloride St. Broken Hill	152177	1950	Road Match	0m
	MERCHANTS-GENERAL	Elder, Smith and Co. Ltd., Chloride St. Broken Hill	152464	1950	Road Match	0m
	WOOL, SKIN & HIDE MERCHANTS	Elder, Smith and Co. Ltd., Chloride St. Broken Hill	154231	1950	Road Match	0m
	GROCERS-WHOLESALE	Fowler, D. and J. Ltd., Chloride St. Broken Hill	152247	1950	Road Match	0m
	MEDICAL PRACTITIONERS	Hammond, H. G., Chloride St. Broken Hill	152431	1950	Road Match	0m
	PHYSIOTHERAPISTS	House, Wally, Chloride St. Broken Hill	153953	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Johns, A. H., Chloride St. Broken Hill	152505	1950	Road Match	0m
	TAXI PROPRIETORS	Pressler, E., Grand Taxi Stand, Chloride St. Broken Hill	154134	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Reed, W., Chloride St. Broken Hill	152524	1950	Road Match	0m
	MEDICAL PRACTITIONERS	Richards, C., Chloride St. Broken Hill	152435	1950	Road Match	0m
	ENGINEERS-GENERAL, MECHANICAL & MANUFACTURING	Rose, J. A. Chloride St. Broken Hill	152081	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Rouse, W. H., Chloride St. Broken Hill	152533	1950	Road Match	0m
	PLUMBERS	Waite, J., Chloride St. Broken Hill	153971	1950	Road Match	0m
	MACHINERY MERCHANTS	White and Hosier, Chloride St. Broken Hill	152417	1950	Road Match	0m
	MINING MACHINERY & SUPPLIES	White and Hosier, Chloride St. Broken Hill	152557	1950	Road Match	0m
	GROCERS & GENERAL STOREKEEPERS	Yondell, H., Chloride St. Broken Hill	152244	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Yondell, H., Chloride St. Broken Hill	152549	1950	Road Match	0m
22	DENTISTS.	Broken Hill Town Dental Clinic, Thomas St, Broken Hill (N.S.W.)	168503	1991	Road Match	0m
	HOMES &/OR INSTITUTIONS	Broken Hill War Veterans Home, Thomas St.. Broken Hill (N.S.W.)	168760	1991	Road Match	0m
	HOMES & INSTITUTIONS	Broken Hill War Veteran's Home, Thomas St. Broken Hill 2880	601155	1970	Road Match	0m
	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Ford's, J. Commercial Service Station, Thomas St. Broken Hill 2880	601401	1970	Road Match	0m
	HOTELS	Excelsior Hotel, Thomas St., West Broken Hill	191490	1961	Road Match	0m
	CHURCHES	Methodist Churches, Thomas St., Broken Hill	366480	1961	Road Match	0m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
22	DAIRIES & DAIRYMEN	Power, L. V., Thomas St., Broken Hill	191026	1961	Road Match	0m
	DOCTORS	Roberts, Thomas St., Broken Hill	191086	1961	Road Match	0m
	HOTELS	Excelsior Hotel, Thomas St., West Broken Hill	152334	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Ritchie, W., Thomas St. Broken Hill	152529	1950	Road Match	0m
	MIXED BUSINESSES	Wlele, F. H. and E., 140 Thomas St., Broken Hill	152638	1950	Road Match	0m
23	HEALTH CENTRES &/OR CLINICS.	Medical Bureau, 84 Bromide St.. Broken Hill (N.S.W.)	168747	1991	Road Match	0m
	HAULAGE CONTRACTORS	Pyriak, H., Bromide St., Broken Hill	191459	1961	Road Match	0m
	MILK VENDORS & DAIRIES	Drysade, E. D., Bromide St. Broken Hill	152486	1950	Road Match	0m
	PAINTERS, DECORATORS & PAPERHANGERS	Nash, Bob, Bromide St. Broken Hill	153941	1950	Road Match	0m
	SIGNWRITERS	Nash, Bob, Bromide St. Broken Hill	154062	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Roberts, W., Bromide St. Broken Hill	152531	1950	Road Match	0m
	PLUMBERS	Stokes Bros., Bromide St. Broken Hill	153970	1950	Road Match	0m
	MILK VENDORS & DAIRIES	Thomas, I., Bromide St, Broken Hill	152545	1950	Road Match	0m
	HAIRDRESSERS & TOBACCONISTS	Williams, J. H., Bromide St. Broken Hill	152275	1950	Road Match	0m
24	SCHOOLS &/OR COLLEGES-PRIVATE &/OR PUBLIC	Morgan Street Primary School, Morgan St.. Broken Hill (N.S.W.)	169154	1991	Road Match	0m
	SCHOOLS, COLLEGES, ETC.	Morgan Street Infants School, Morgan St., Broken Hill	192205	1961	Road Match	0m
	MILK VENDORS & DAIRIES	Dreyer, B., Morgan St. Broken Hill	152485	1950	Road Match	0m
25	MILK VENDORS & DAIRIES	Reid, E. F., Thomas Lane Broken Hill	152525	1950	Road Match	30m
26	GOVERNMENT DEPARTMENTS.	Agriculture. Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168656	1991	Road Match	31m
	HEALTH CENTRES &/OR CLINICS.	Central Baby Health Centre, Sulphide St., Broken Hill (N.S.W.)	168745	1991	Road Match	31m
	LOCAL BODIES.	City Council Administrative Centre, Sulphide St. Broken Hill (N.S.W.)	168877	1991	Road Match	31m
	SWIMMING POOLS.	City Pool, Sulphide St., Broken Hill (N.S.W.)	169205	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Corrective Services. Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168666	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Education. Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168668	1991	Road Match	31m
	LOCAL BODIES.	Electricity Dept, Sulphide St, Broken Hill (N.S.W.)	168880	1991	Road Match	31m
	LOCAL BODIES.	Engineers, Dept. of, Sulphide St. Broken Hill (N.S.W.)	168881	1991	Road Match	31m
	LOCAL BODIES.	Far Western Region Advisory Council, Sulphide St, Broken Hill (N.S.W.)	168882	1991	Road Match	31m
	LOCAL BODIES.	Health. Dept. of, Sulphide St, Broken Hill (N.S.W.)	168884	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Housing Commission of NSW, Sulphide St.. Broken Hill (N.S.W.)	168670	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Industrial Development & Decentrilisation, Dept. of. Sulphide St., Broken Hill (N.S.W.)	168671	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Mineral Resources, Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168673	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	N S W. Youth & Community Services. Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168675	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	National Parks & Wildlife Service, Sulphide St.. Broken Hill (N.S.W.)	168676	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Public Trust Office. Courthouse, Sulphide St., Broken Hill (N.S.W.)	168681	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS.	Public Works. Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168682	1991	Road Match	31m

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
26	GOVERNMENT DEPARTMENTS.	Soil Conservation Service of N.S.W, Sulphide St.. Broken Hill (N.S.W.)	168684	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS	State Emergency Services Administration Centre, Sulphide St., Broken Hill (N.S.W.)	168685	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS	Tourism, Dept. of, Sulphide St.. Broken Hill (N.S.W.)	168687	1991	Road Match	31m
	GOVERNMENT DEPARTMENTS	Western Lands Commission, Sulphide St Broken Hill (N.S.W.)	168688	1991	Road Match	31m
	NEWSPAPERS, JOURNALS, ETC.	Barrier Miner, Sulphide St., Broken Hill	192068	1961	Road Match	31m
	PRINTERS & PUBLISHERS	Barrier Miner, Sulphide St., Broken Hill	192153	1961	Road Match	31m
	HEALTH CENTRES	Baby Clinics: Sulphide St., Broken Hill	152309	1950	Road Match	31m
	NEWSPAPERS	Barrier Miner, Sulphide St. Broken Hill	153924	1950	Road Match	31m
	PRINTERS & BOOKBINDERS	Barrier Miner, Sulphide St. Broken Hill	153978	1950	Road Match	31m
	OFFICE SUPPLIES	Chartres Ltd., Sulphide St. Broken Hill	153926	1950	Road Match	31m
	TYPEWRITER DEALERS & REPAIRERS	Chartres Ltd., Sulphide St. Broken Hill	154204	1950	Road Match	31m
	SEWING MACHINE SALES & SERVICE	DobbiesSewing Machines, Sulphide St. Broken Hill	154046	1950	Road Match	31m
	MILK VENDORS & DAIRIES	Gardener, T. J., Sulphide St Broken Hill	152493	1950	Road Match	31m
	DRESSMAKERS	Hill, D. M., Sulphide St. Broken Hill	152012	1950	Road Match	31m
	MILK VENDORS & DAIRIES	King, E. M., Sulphide St. Broken Hill	152508	1950	Road Match	31m
	GROCERS & GENERAL STOREKEEPERS	Krantz's Big Grocery Store, Sulphide St. Broken Hill	152216	1950	Road Match	31m
	HARDWARE MERCHANTS	Krantz's Store, Sulphide St. Broken Hill	152292	1950	Road Match	31m
	LEATHER GOODS	Krantz's Store, Sulphide St. Broken Hill	152400	1950	Road Match	31m
	TRAVEL GOODS-RETAIL	Krantz's Store, Sulphide St. Broken Hill	154191	1950	Road Match	31m
	WINE & SPIRIT MERCHANTS	Krantz's Store, Sulphide St. Broken Hill	154226	1950	Road Match	31m
	HOTELS	Masonic Hotel, Opp. Sulphide St. Station Broken Hill	152344	1950	Road Match	31m
27	HOSTELS.	Aboriginal Girts Hostel, 102 Morgan La., Broken Hill (N.S.W.)	168774	1991	Road Match	126m
	BUTCHERS	Conroy, P. K. Pty. Ltd., Morgan Lane Broken Hill	366413	1961	Road Match	126m
	SMALLGOODS MANUFACTURERS	Conroy, P. K. Pty. Ltd., Morgan Lane, Broken Hill	366467	1961	Road Match	126m
	FUEL MERCHANTS	Wilson, L., 100 Morgan Lane Broken Hill	152145	1950	Road Match	126m
28	JUSTICES OF THE PEACE	Hulbert, A., 162 William Lane, Broken Hill	191661	1961	Road Match	132m

Dry Cleaners, Motor Garages & Service Stations

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



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: 0 120 240 360 480 Meters

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 November 2022

Historical Business Directories

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
1	MOTOR GARAGES & SERVICE STATIONS.	R.J.O. Automotive & General Engineering, 331 Morgan St.. Broken Hill (N.S.W.)	169007	1991	Premise Match	119m	North East
2	MOTOR GARAGES & SERVICE STATIONS.	Kees Hille Motors, 342 Thomas St. Broken Hill (N.S.W.)	169004	1991	Premise Match	205m	North East
3	MOTOR GARAGES & SERVICE STATIONS.	Shell Memorial Service Station, 164 William St.. Broken Hill (N.S.W.)	169010	1991	Premise Match	225m	South
	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Nelson's Service Station, 164 William St., Broken Hill	191983	1961	Premise Match	225m	South
	MOTOR GARAGES & ENGINEERS	Gear's Service Station, 164 William St. Broken Hill	152693	1950	Premise Match	225m	South
4	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Ford's, John, Commercial Service Station, Thomas St., Cnr. Oxide St., Broken Hill	191975	1961	Road Intersection	251m	North East
5	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Quinn Motors, 111 Cummins La. Broken Hill 2880	601413	1970	Premise Match	353m	West

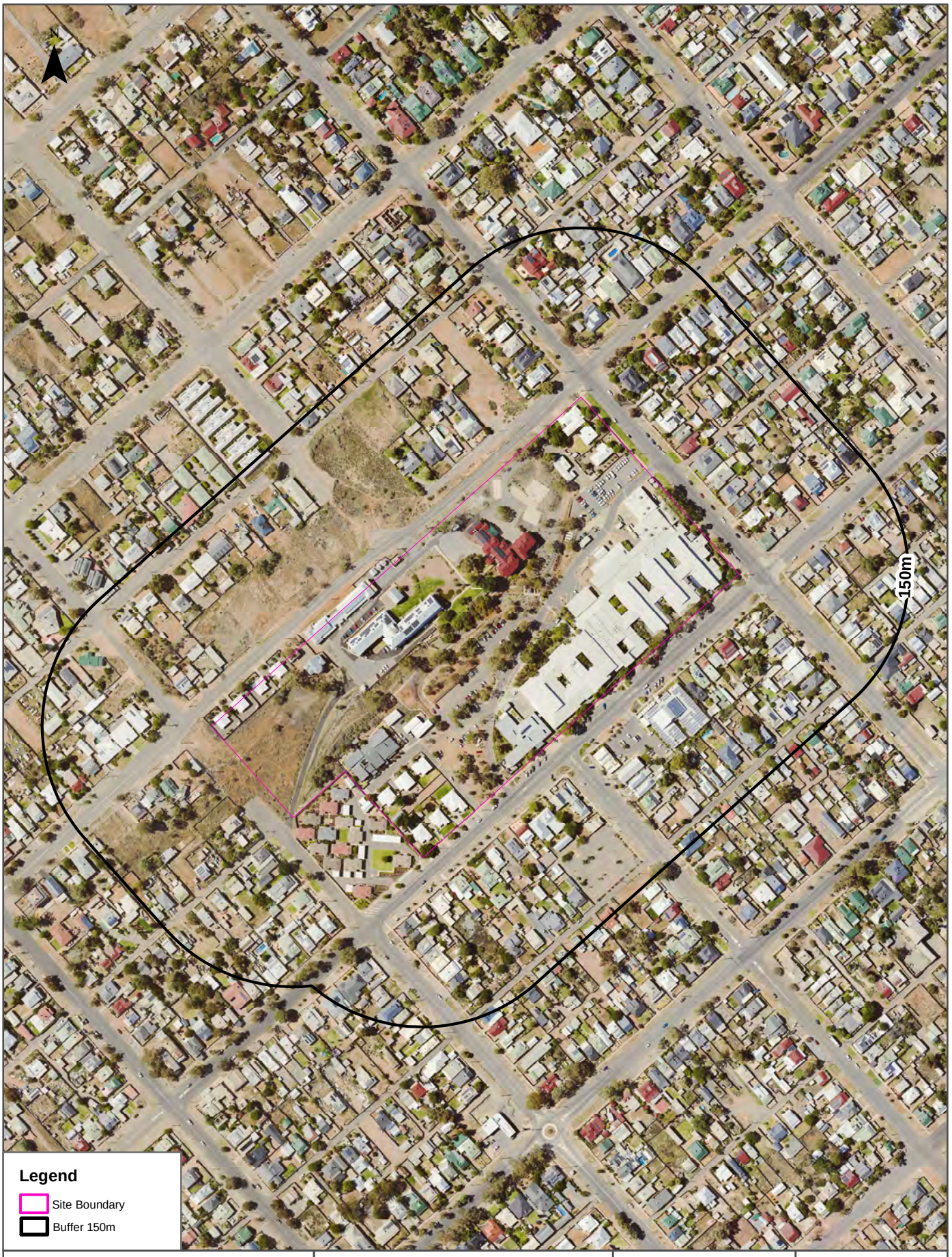
Dry Cleaners, Motor Garages & Service Stations
Road or Area Matches

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

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
6	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Ford's, J. Commercial Service Station, Thomas St. Broken Hill 2880	601401	1970	Road Match	0m
7	DRY CLEANERS, DYERS & PRESSERS	Valetta Dry Cleaners, 6 Chloride St., Broken Hill	191122	1961	Road Match	0m
8	DRY CLEANERS, DYERS & PRESSERS	Bally's Dry Cleaners, Main Office and Works: Oxide St., Broken Hill	366572	1961	Road Match	236m
	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Chalmers' Service Station, Oxide St., Broken Hill	191971	1961	Road Match	236m
	DRY CLEANERS, DYERS & PRESSERS	Modern Dyers and Dry Cleaners, 239 Oxide St., Broken Hill	366573	1961	Road Match	236m
	DRY CLEANERS & DYERS	Broken Hill Dry Cleaners (J. Angell, Propr.), 109 Oxide St. Broken Hill	152036	1950	Road Match	236m
	MOTOR GARAGES & ENGINEERS	Co-op. Service Station, Oxide St. Broken Hill	152691	1950	Road Match	236m
	MOTOR GARAGES & ENGINEERS	Picken's Garage, Oxide St. Broken Hill	152702	1950	Road Match	236m
	DRY CLEANERS & DYERS	Valetta Dry Cleaners, 22 Oxide St. Broken Hill	152041	1950	Road Match	236m
	MOTOR GARAGES & ENGINEERS	Welsh's Service Station, Oxide St. Broken Hill	152706	1950	Road Match	236m
9	MOTOR GARAGES, ENGINEERS & SERVICE STATIONS	Memorial Service Station, William St. Broken Hill 2880	601411	1970	Road Match	241m

Aerial Imagery 2021

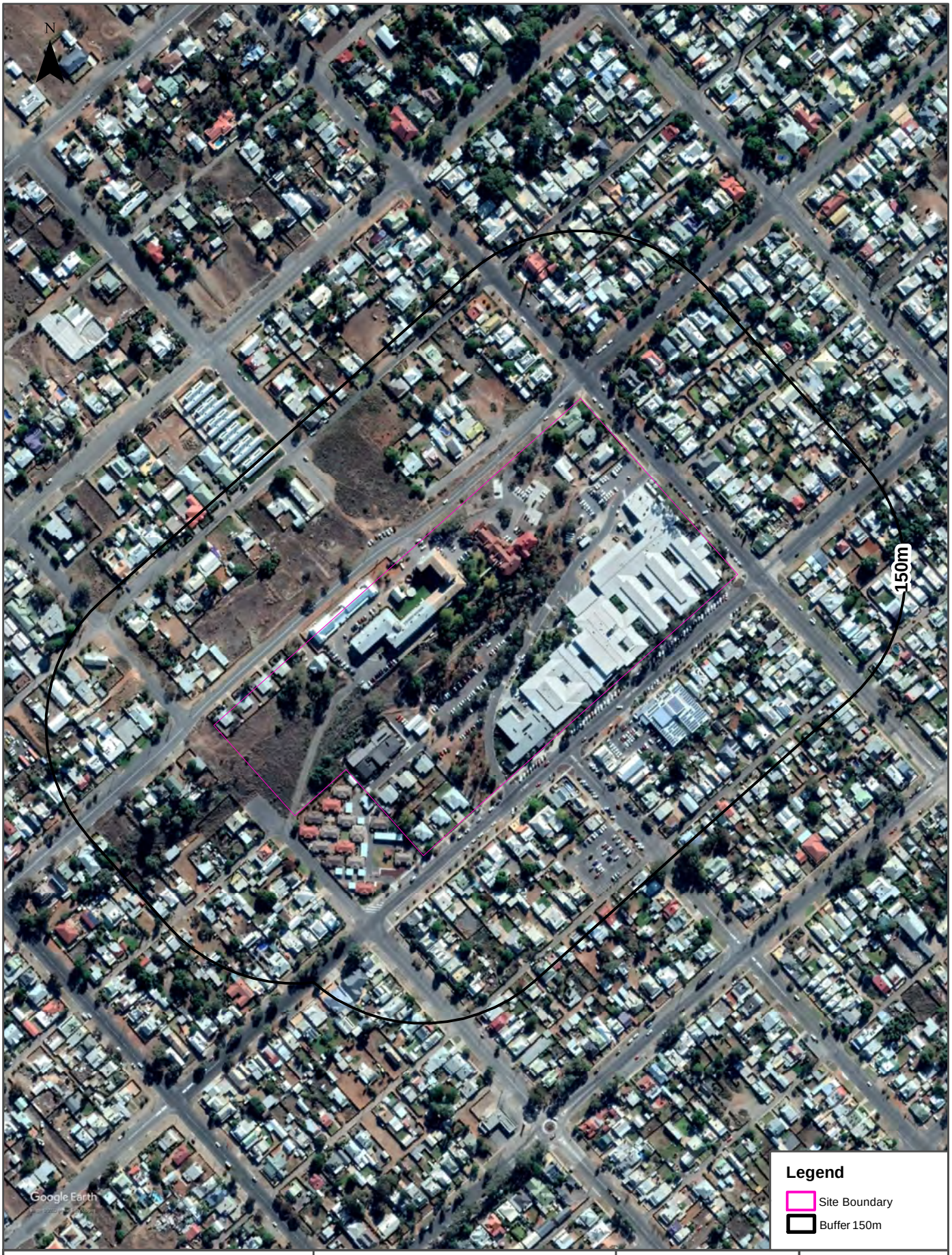
Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 29 November 2022

Aerial Imagery 2017

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 November 2022

Aerial Imagery 2010

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Scale: 0 50 100 150 200 Meters	Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 28 November 2022

Aerial Imagery 2004

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Scale:
0 50 100 150 200
Meters

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Coordinate System:
GDA 1994 MGA Zone 56

Date: 29 November 2022

Aerial Imagery 1995

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Aerial Imagery 1981

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Aerial Imagery 1975

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Aerial Imagery 1965

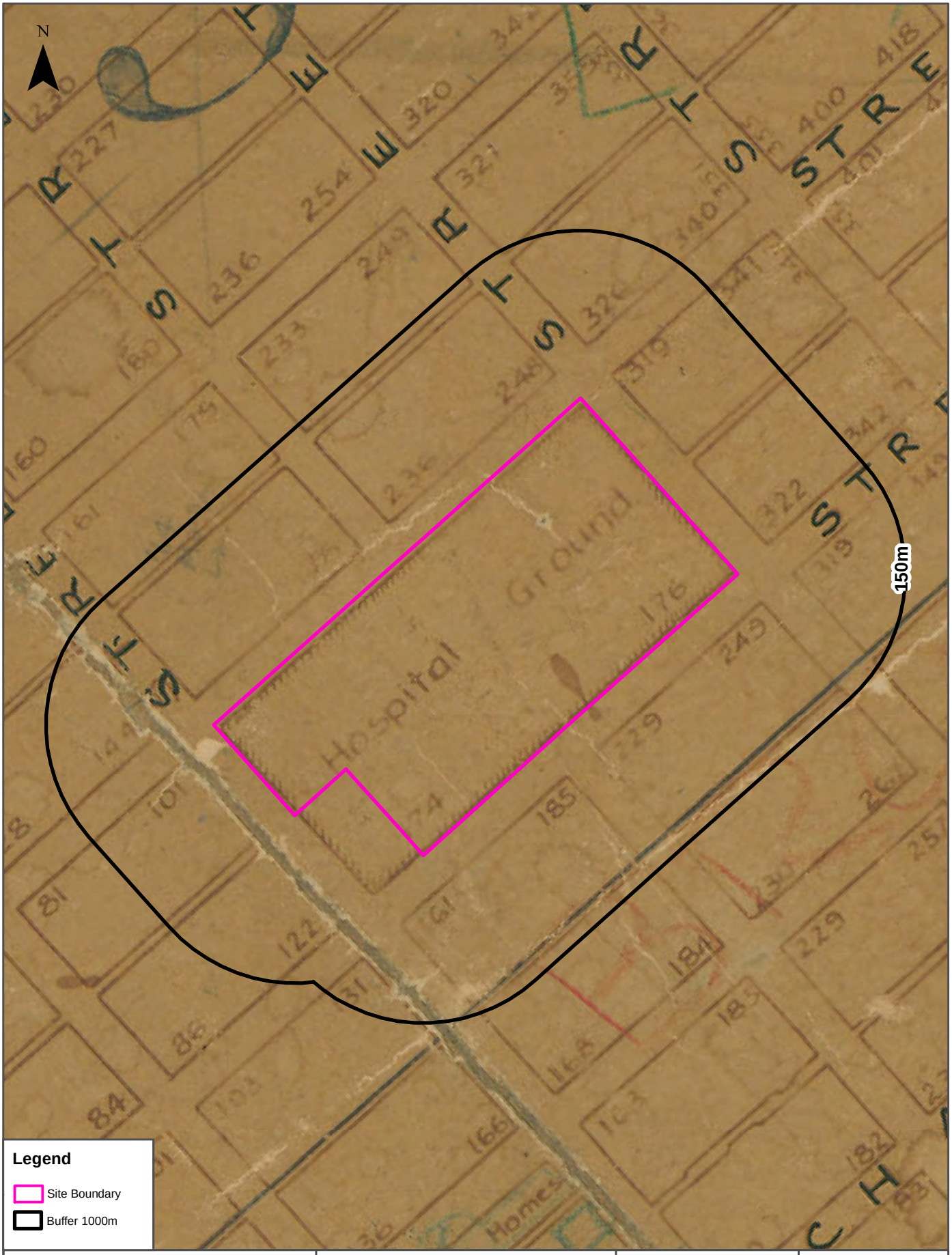
Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Aerial Imagery 1954

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Historical Map Year Unknown

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Topographic Map 2015

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Scale: 0 175 350 525 700 Meters

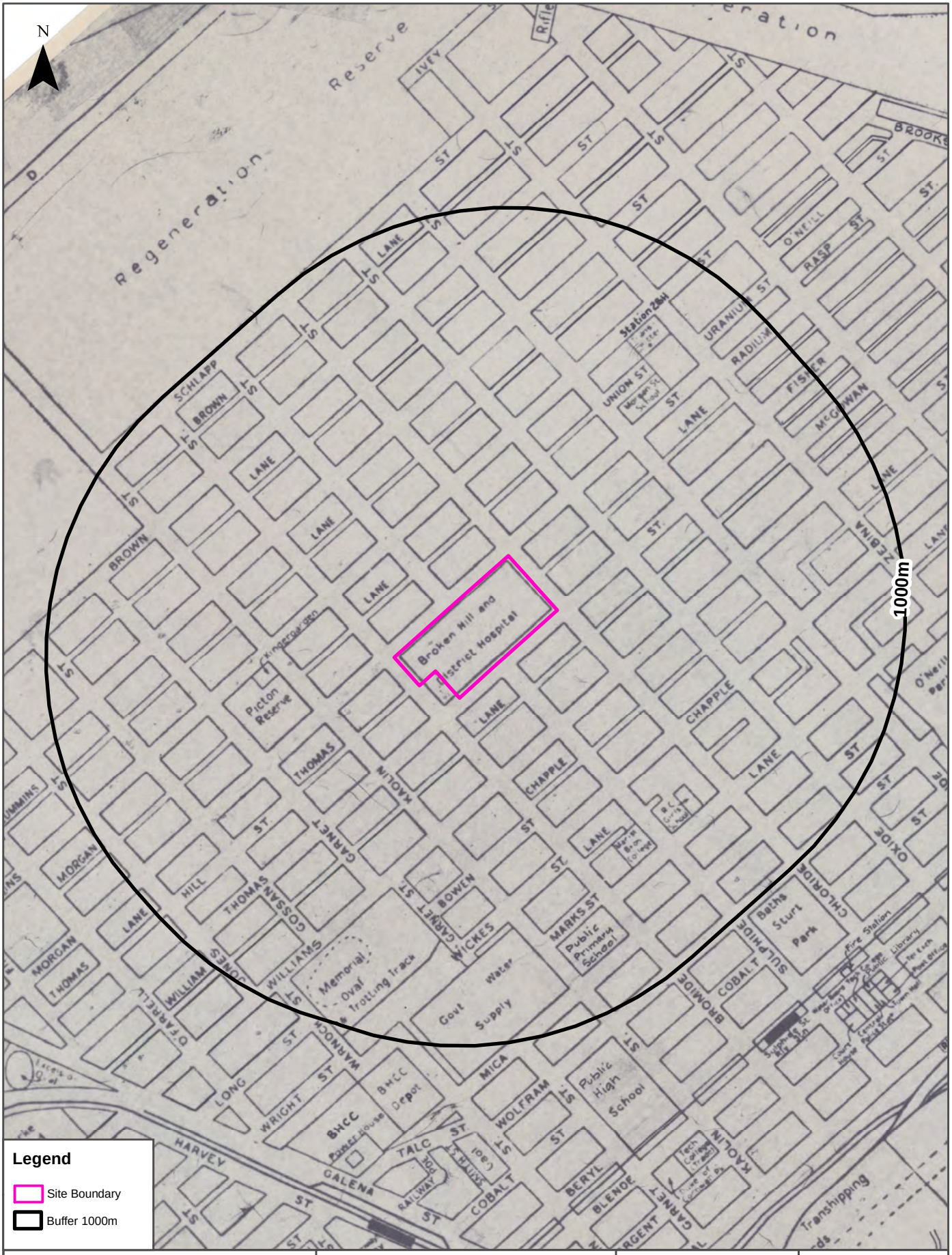
Data Sources: Topographic Map Data
© NSW Land and Property Information

Coordinate System:
GDA 1994 MGA Zone 56

Date: 29 November 2022

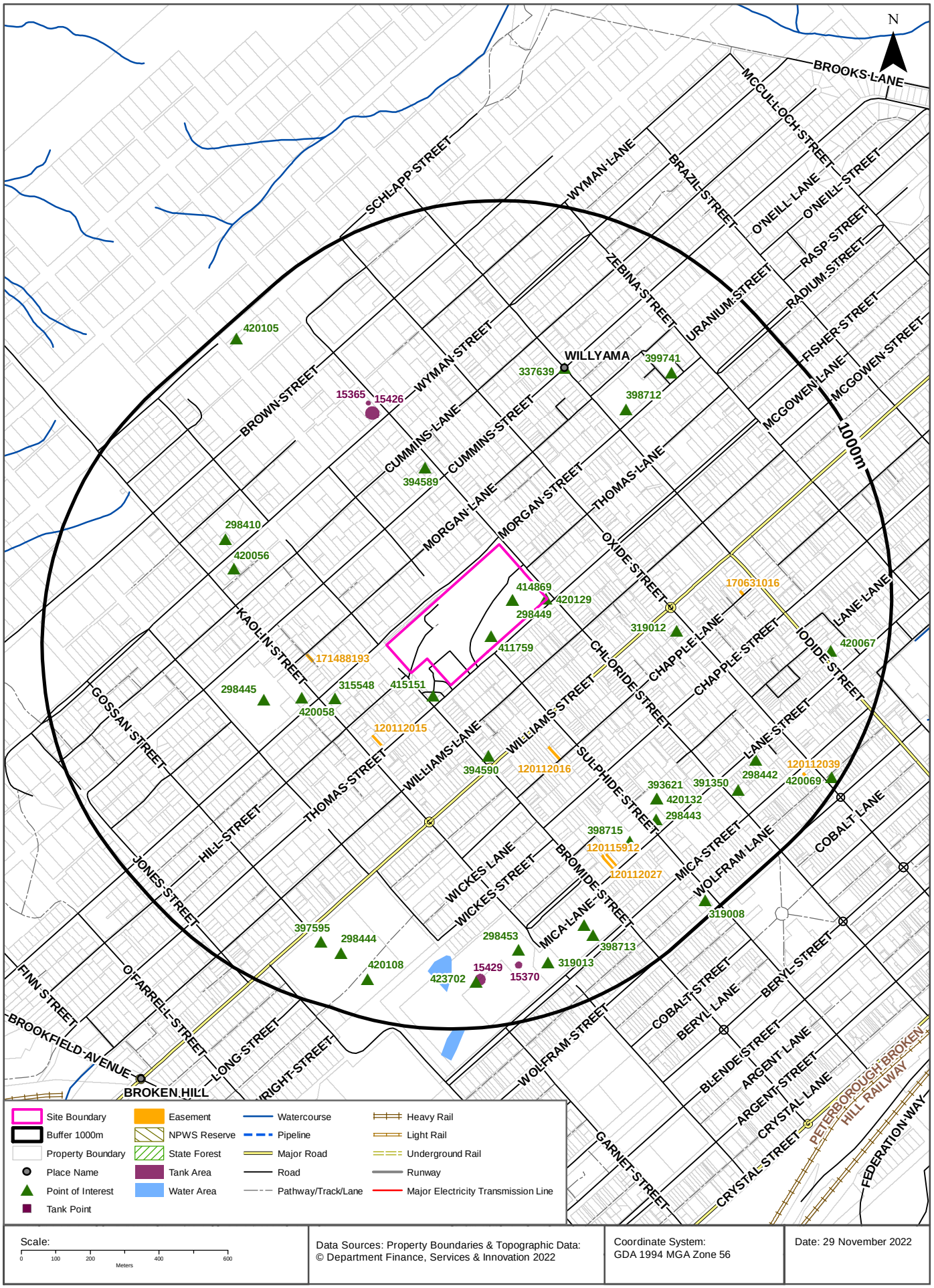
Historical Map 1960

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Topographic Features

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Topographic Features

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
411759	Community Medical Centre	BROKEN HILL COMMUNITY HEALTH	0m	On-site
414869	Nursing Home	BROKEN HILL TRANSITIONAL AGED CARE SERVICE	0m	On-site
420129	Monument	SISTER DRUMMOND MEMORIAL PARK	0m	On-site
298449	General Hospital	BROKEN HILL HOSPITAL	0m	On-site
415151	Retirement Village	WAR VETS RETIREMENT LIVING	58m	South West
315548	Art Gallery	ROXANNE MINCHIN GALLERY	214m	South West
394590	Art Gallery	HORIZON ART GALLERY	232m	South
420058	Picnic Area	PLAYGROUND	289m	South West
394589	Art Gallery	HOMESTEAD GALLERY	310m	North
319012	Place Of Worship	UNITING CHURCH	386m	East
298445	Picnic Area	PICTON SPORTSGROUND	390m	West
420056	Tourist Attraction	PRO HART SCULPTURE PARK	495m	West
398712	Primary School	MORGAN STREET PUBLIC SCHOOL	540m	North East
337639	Rural Place	WILLYAMA	547m	North
298410	Art Gallery	PRO HART ART GALLERY	560m	West
393621	Place Of Worship	ST JOSEPHS CONVENT CHAPEL & SITE FORMER	646m	South East
420132	Historic Site	ST JOSEPHS CONVENT CHAPEL AND SITE	646m	South East
398715	Primary School	SACRED HEART PARISH SCHOOL	687m	South East
298443	Place Of Worship	SACRED HEART CATHOLIC CATHEDRAL	689m	South East
399741	Primary School	MORGAN STREET PUBLIC SCHOOL	709m	North East
298442	Place Of Worship	ANGLICAN CHURCH	766m	South East
391350	Gaol	BROKEN HILL JUVENILE JUSTICE CENTRE	786m	South East
298453	Filtration Plant	MICA STREET WATER TREATMENT PLANT	794m	South
415105	Preschool	BROKEN HILL PUBLIC SCHOOL PRESCHOOL	798m	South
397595	Trotting Track	MEMORIAL OVAL PACEWAY	824m	South West
398713	Primary School	BROKEN HILL PUBLIC SCHOOL	835m	South
420067	Community Facility	3RD BROKEN HILL SCOUT HALL	837m	East
298444	Park	MEMORIAL OVAL	839m	South
319013	Lookout	J P KEENAN LOOKOUT	854m	South
423702	Filtration Plant	BROKEN HILL WATER TREATMENT PLANT	865m	South
420108	Monument	BROKEN HILL WAR MEMORIAL	887m	South

Map Id	Feature Type	Label	Distance	Direction
420105	Park	WHITE ROCKS HISTORICAL SITE	955m	North West
319008	Place Of Worship	SALVATION ARMY CHURCH	959m	South East
420069	Community Facility	BROKEN HILL SCOUT HALL	976m	South East

Topographic Features

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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
15426	Water	Operational		01/01/2008	509m	North West
15365	Water	Operational		23/02/2000	553m	North West
15370	Water	Operational		23/02/2000	828m	South
15429	Water	Operational		12/04/2005	844m	South

Tanks (Points)

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

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

Major Easements

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120112015	Primary	Undefined		213m	South West
171488193	Primary	Right of way		217m	West
120112016	Primary	Undefined		325m	South East
170631016	Primary	Right of way		560m	East
120115912	Primary	Undefined		663m	South East
120112027	Primary	Undefined		669m	South East
120112039	Primary	Undefined		900m	South East

Topographic Features

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

State Forest

What State Forest exist within the dataset buffer?

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

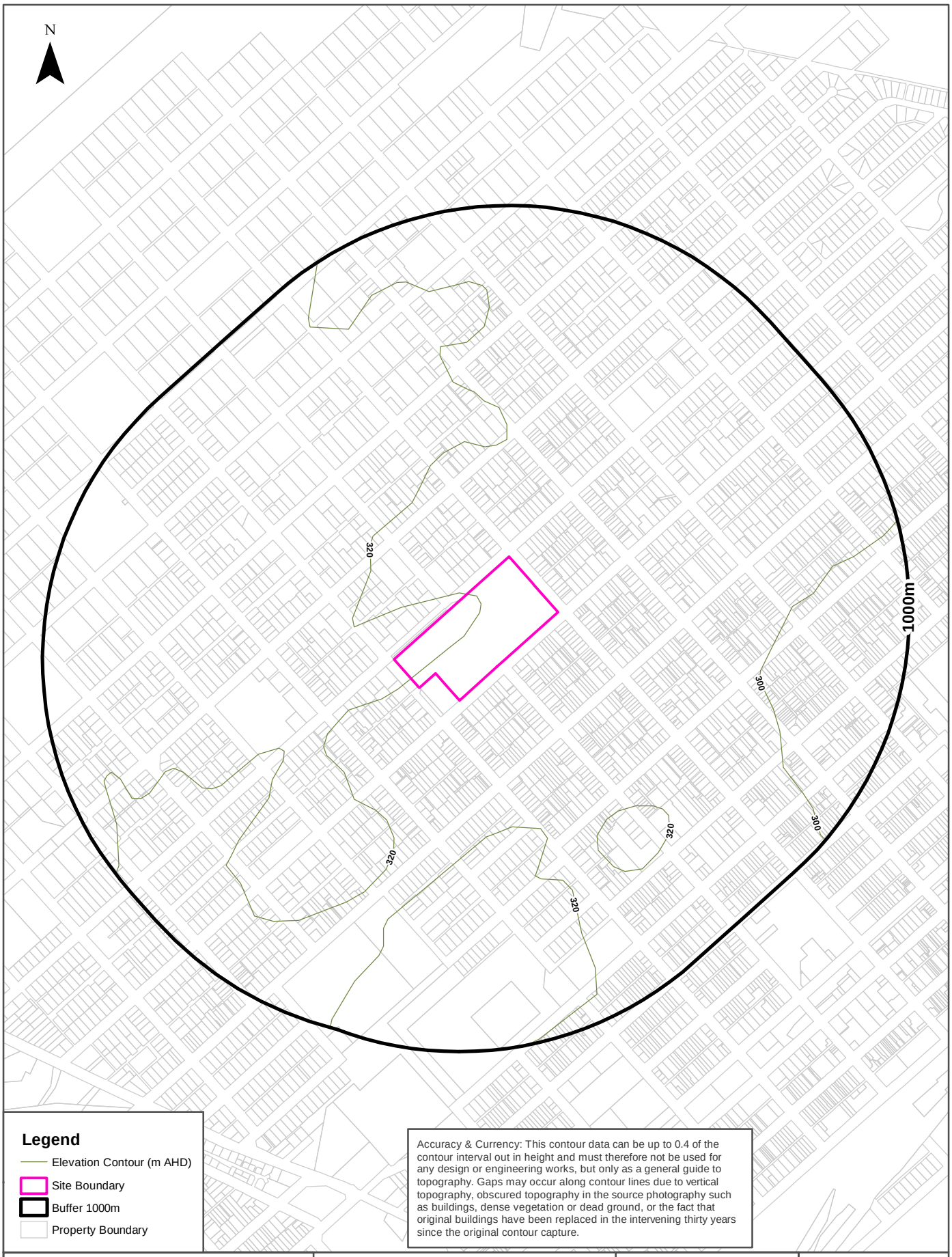
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

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

Elevation Contours (m AHD)

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Hydrogeology & Groundwater

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Local aquifers, of generally low productivity	0m	On-site

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

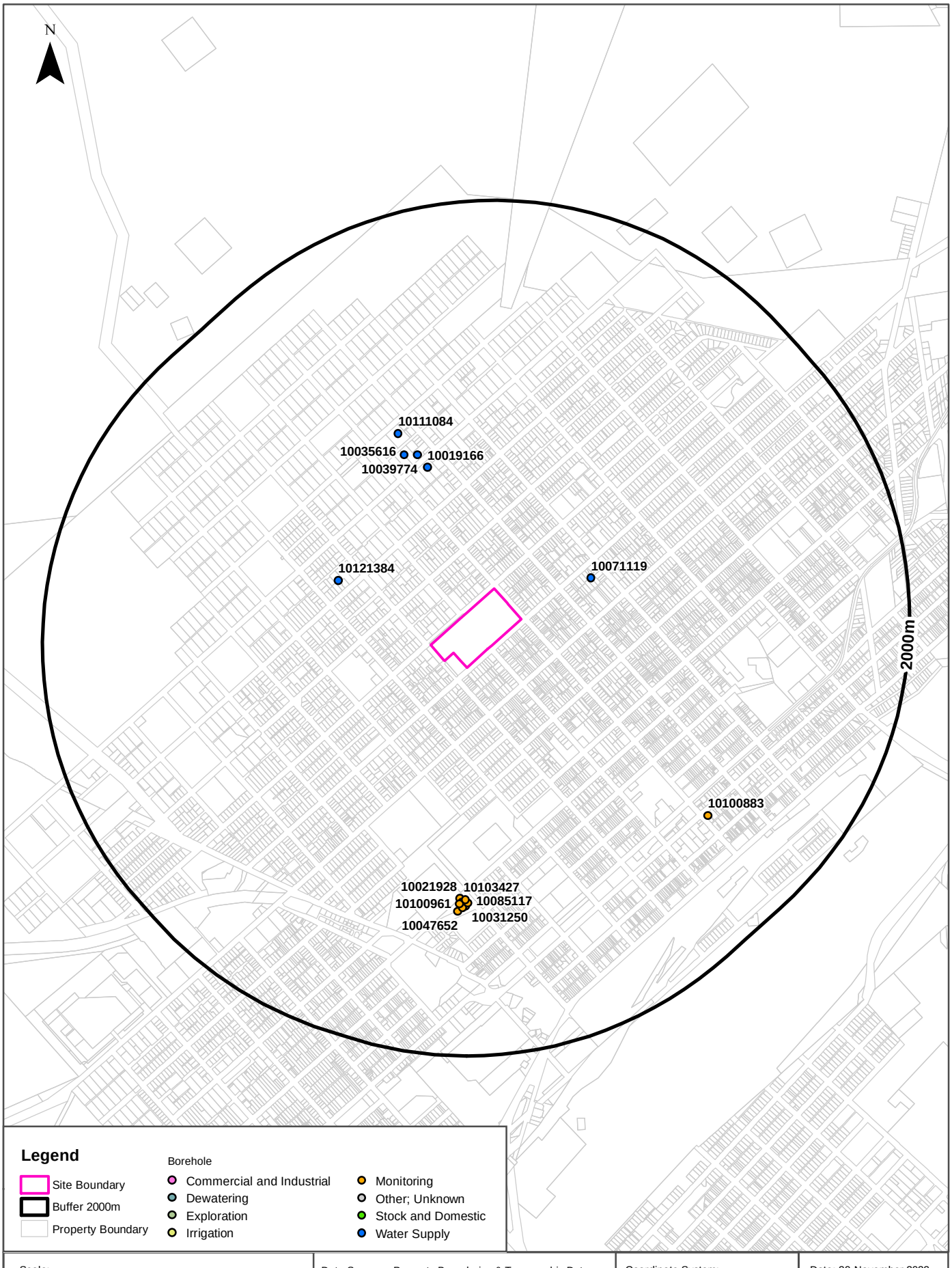
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

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

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Hydrogeology & Groundwater

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Groundwater Boreholes

Boreholes within the dataset buffer:

NGIS Bore ID	NSW Bore ID	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Height Datum	Salinity (mg/L)	Yield (L/s)	SWL (mbgl)	Distance	Direction
10071119	GW600132	Water Supply	Functional	06/07/2006	17.50		AHD		0.015	9.00	417m	North East
10121384	GW600171	Water Supply	Functioning	05/05/2009	30.00		AHD	5814	1.250	15.70	579m	West
10019166	GW803404	Water Supply	Functioning	06/10/2007	31.00		AHD	Good	0.150	22.00	710m	North
10039774	GW600160	Water Supply	Functioning	12/01/2009	30.00		AHD			16.80	792m	North
10035616	GW600162	Water Supply	Functioning	12/01/2009	54.00		AHD			14.00	829m	North West
10111084	GW600163	Water Supply	Functioning	12/01/2009	30.00		AHD				938m	North
10021928	GW600301	Monitoring	Functional	13/07/2011	20.40		AHD			10.95	1191m	South
10103427	GW600304	Monitoring	Functional	13/07/2011	16.00		AHD			7.10	1196m	South
10053889	GW600303	Monitoring	Functional	11/07/2011	12.00		AHD			6.46	1211m	South
10085117	GW600307	Monitoring	Functional	05/07/2011	18.90		AHD				1214m	South
10100961	GW600302	Monitoring	Functional	10/07/2011	20.54		AHD			6.60	1220m	South
10031250	GW600306	Monitoring	Functional	07/07/2011	23.20		AHD			3.62	1227m	South
10062401	GW600305	Monitoring	Functional	08/07/2011	16.00		AHD			3.85	1236m	South
10047652	GW600308	Monitoring	Functional	13/07/2011	12.80		AHD			8.45	1258m	South
10100883	GW500071	Monitoring	Unknown	26/06/1995	7.50		AHD				1398m	South East

Hydrogeology & Groundwater

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Driller's Logs

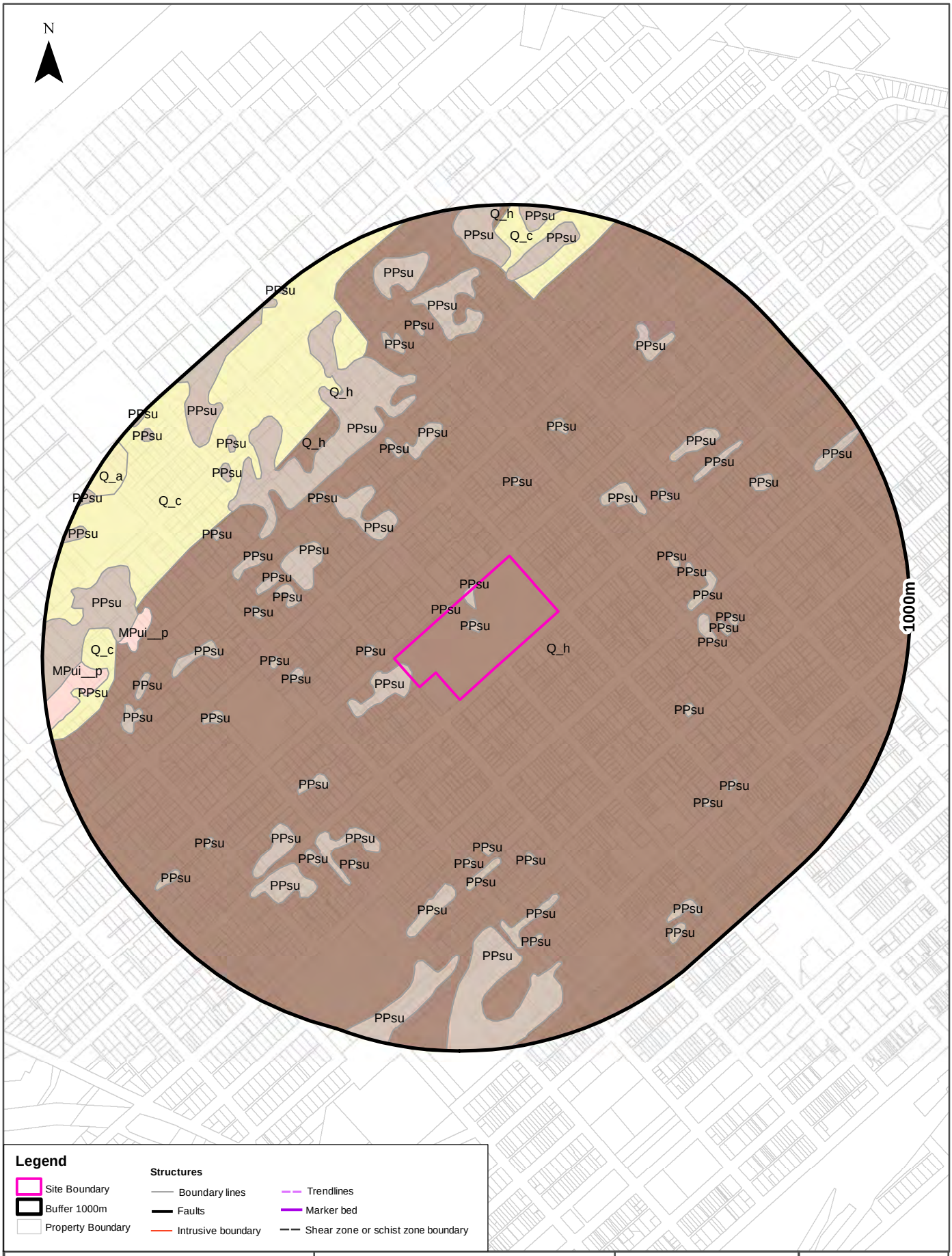
Drill log data relevant to the boreholes within the dataset buffer:

NGIS Bore ID	Drillers Log	Distance	Direction
10071119	0.00m-2.00m Red Clay 2.00m-4.00m Blue Gravelly Slate 4.00m-6.00m Blue Slate 6.00m-9.00m Yellow Clay 9.00m-10.00m Yellow Sand 10.00m-14.00m Blue Shaley Clay 14.00m-14.30m Blue Stone 14.30m-15.50m Brown Conglomerate 15.50m-17.50m Bluestone sump	417m	North East
10121384	0.00m-0.40m Soil Red fg loose 0.40m-26.50m Quartzite light brown fg hard 26.50m-30.00m Quartzite/Pegmatite light brown fg fractured	579m	West
10019166	0.00m-0.50m Clay, red 0.50m-2.00m Granite & Quartz 2.00m-6.00m Decomposed Granite 6.00m-8.00m Granite & basalt 8.00m-10.00m Limestone 10.00m-24.00m Basalt 24.00m-25.50m Basalt, fine white Sand mix (water bearing) 25.50m-31.00m Basalt	710m	North
10039774	0.00m-6.00m Top soil 6.00m-8.00m Mica 8.00m-18.00m Basalt 18.00m-19.00m Basalt, traces of quartz 19.00m-24.00m Basalt, traces of Garnite Mica 24.00m-30.00m Broken Basalt, water bearing	792m	North
10035616	0.00m-1.00m Top soil and fill 1.00m-6.00m Basalt, Mica and Gypsum 6.00m-23.00m Basalt 23.00m-26.00m Broken Basalt 26.00m-54.00m Basalt	829m	North West
10111084	0.00m-1.80m Top Soil 1.80m-16.00m Basalt 16.00m-24.00m Basalt, broken ground 24.00m-30.00m Basalt	938m	North
10021928	0.00m-0.20m Fill 0.20m-20.40m Amphibolite/Granite	1191m	South
10103427	0.00m-0.50m Fill 0.50m-16.00m Amphibolite/Granite	1196m	South
10053889	0.00m-0.05m Asphalt 0.05m-0.40m Fill 0.40m-12.00m Amphibolite/Granite	1211m	South
10085117	0.00m-0.20m Clayey Sand 0.20m-18.90m Amphibolite/Granite	1214m	South
10100961	0.00m-0.35m Asphalt 0.35m-1.00m Fill 1.00m-20.54m Amphobolite/Granite	1220m	South
10031250	0.00m-0.30m Clayey Sand 0.30m-23.20m Amphibolite/Granite	1227m	South
10062401	0.00m-0.30m Clayey Sand 0.30m-16.00m Amphibolite/Granite	1236m	South
10047652	0.00m-0.10m Clayey Sand 0.10m-12.80m Amphibolite/Granite	1258m	South

NGIS Bore ID	Drillers Log	Distance	Direction
10100883	0.00m-0.20m CONCRETE FORECOURT 0.20m-0.40m CLAYEY SAND: GREY BROWN, MOIST MED GRAINED, OCCASIONALLY COARSE (QUARTZ GRAINS- SUBANGULAR) NOTICEABLE HYDROCARBON ODOUR 0.40m-2.10m SANDY SILTY CLAY: GREENY GREY, MOIST, MED TO HIGH PLASTICITY, MOISTURE CONTENT IS GREATER THAN PLASTIC LIMIT, FINE SAND, MICACEOUS, SOME CALCRETE AND QUARTZ GRAVEL TO 10MM, NOTICEABLE HYDROCARBON ODOU 2.10m-4.00m SANDY SILT: ORANGE BROWN, MOIST, TRACE PLASTICITY, FINE TO MED SAND, MICACEOUS, WEATHERED (FRIABLE) SCHISTOSE GRAVEL TO10MM, NOTICEABLE HYDROCARBON ODOUR 4.00m-6.50m GRAVELLY SANDY SILT: PALE GREENY BROWN, SLIGHTLY MOIST, FINE TO MED SAND, MICACEOUS, LOW/TRACE PLASTICITY, SCHISTOSE GRAVEL (GRIABLE) TO10MM THROUGHOUT, HYDROCARBON ODOUR. 6.50m-7.50m SANDY SILT: GREENY BROWN MOIST TO VERY MOIST, LOW PLASTICITY, FINE SAND, SOME WEATHERED SCHISTOSE FRAGMENT FRIABLE 5MM	1398m	South East

Geology

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Geological Units

What are the Geological Units within the dataset buffer?

Unit Code	Unit Name	Description	Unit Stratigraphy	Age	Dominant Lithology	Distance
Q_h	Anthropogenic deposits	Anthropocene deposits varying from large man-made clasts (concrete blocks to building demolition rubble) to quarried natural boulders, with interstitial sand-sized to clay matrix.	/Anthropogenic deposits////	Quaternary (base) to Now (top)	Anthropogenic material	0m
PPsu	Sundown Group	Abundant pelite - psammopelite rocks, thin pelitic units common (lower half); thin pelite and psammite - psammopelite (upper half); sporadic composite gneiss, grading to metasediment. Small basic gneiss and quartz-gahnite bodies also at base.	Willyama Supergroup/Sundown Group////	Statherian (base) to Statherian (top)	Siliciclastic sedimentary rock	0m
Q_c	Colluvium	Poorly sorted, weakly cemented to unconsolidated colluvial lenses of polymictic conglomerate with medium- to very coarse-grained sand matrix; interspersed with unconsolidated clayey and silty red-brown (aeolian) sand layers, modified by pedogenesis.	/Colluvium////	Quaternary (base) to Now (top)	Clastic sediment	622m
MPui__p	Unassigned Mesoproterozoic intrusions - pegmatite	Pegmatite, deformed leucogranite, or mixtures of these.	/Unassigned Mesoproterozoic intrusions//Unassigned Mesoproterozoic intrusions - pegmatite//	Mesoproterozoic (base) to Mesoproterozoic (top)	Pegmatite	698m
Q_a	Alluvium	Unconsolidated grey to brown to beige humic (±)micaceous silty clay, quartz-(±)lithic silt, fine- to medium-grained quartz-rich to quartz-lithic sand, polymictic pebble to cobble gravel (as sporadic lenses); sporadic palaeosol horizons.	/Alluvium////	Quaternary (base) to Now (top)	Clastic sediment	920m

Linear Geological Structures

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

Map ID	Feature Description	Map Sheet Name	Distance
No Features			

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

Map ID	Boundary Type	Description	Map Sheet Name	Distance
No Features				

Naturally Occurring Asbestos Potential

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

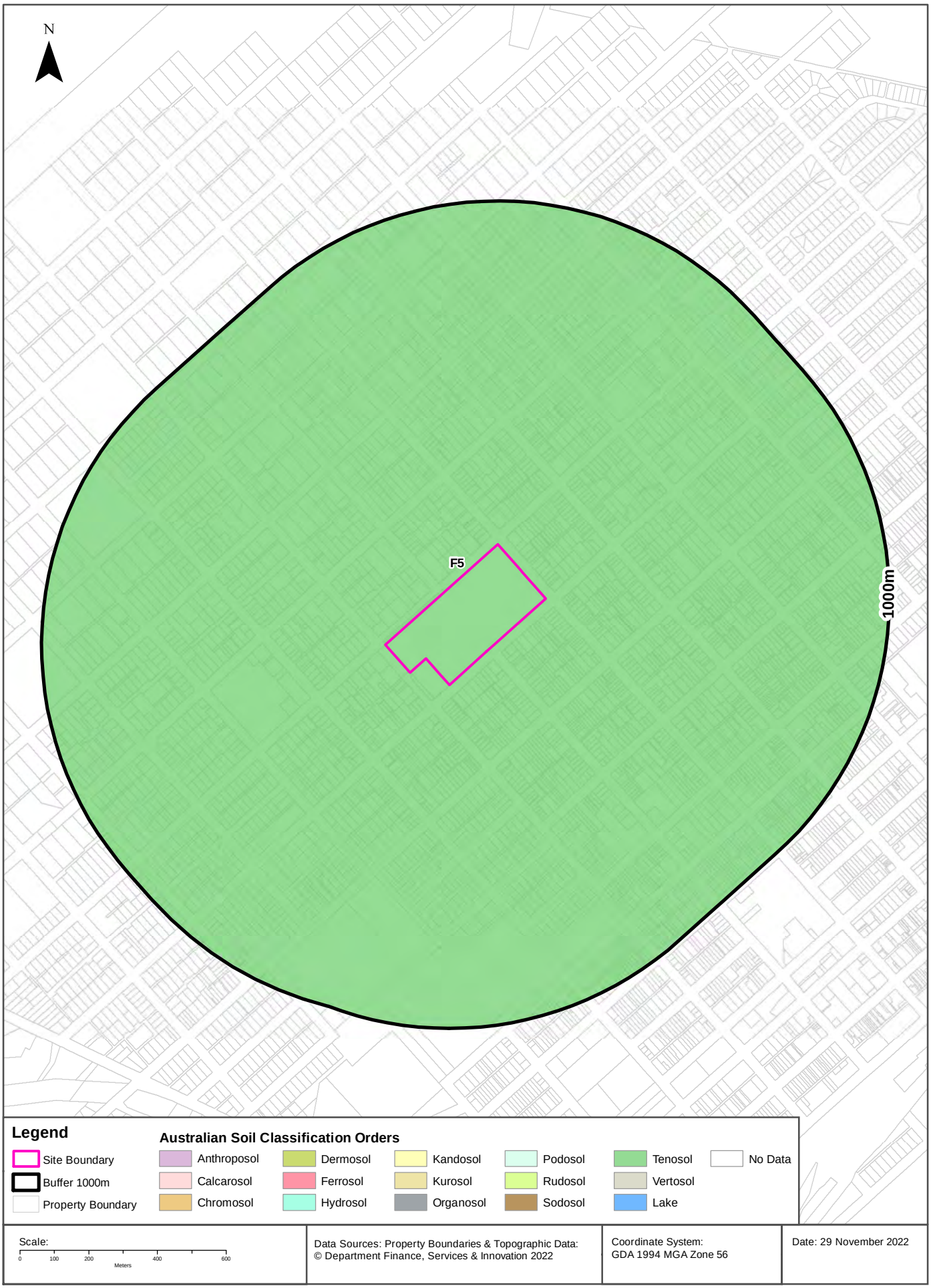
Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

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

Atlas of Australian Soils

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Soils

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
F5	Tenosol	Hilly with small valley plains: shallow dense loamy soils (Um5.41); shallow calcareous loamy soils (Um5.11); and shallow loams (Um1.43) and sands (Uc1.43) occur on the hills. Associated are crusty loamy soils (Dr1.13) and (Dr1.33) and highly calcareous loamy earths (Gc1.12) on pediments, slopes, and in the small valleys. This description is expanded slightly from that given in Sheet 1.	0m	On-site

Acid Sulfate Soils

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Environmental Planning Instrument - Acid Sulfate Soils

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

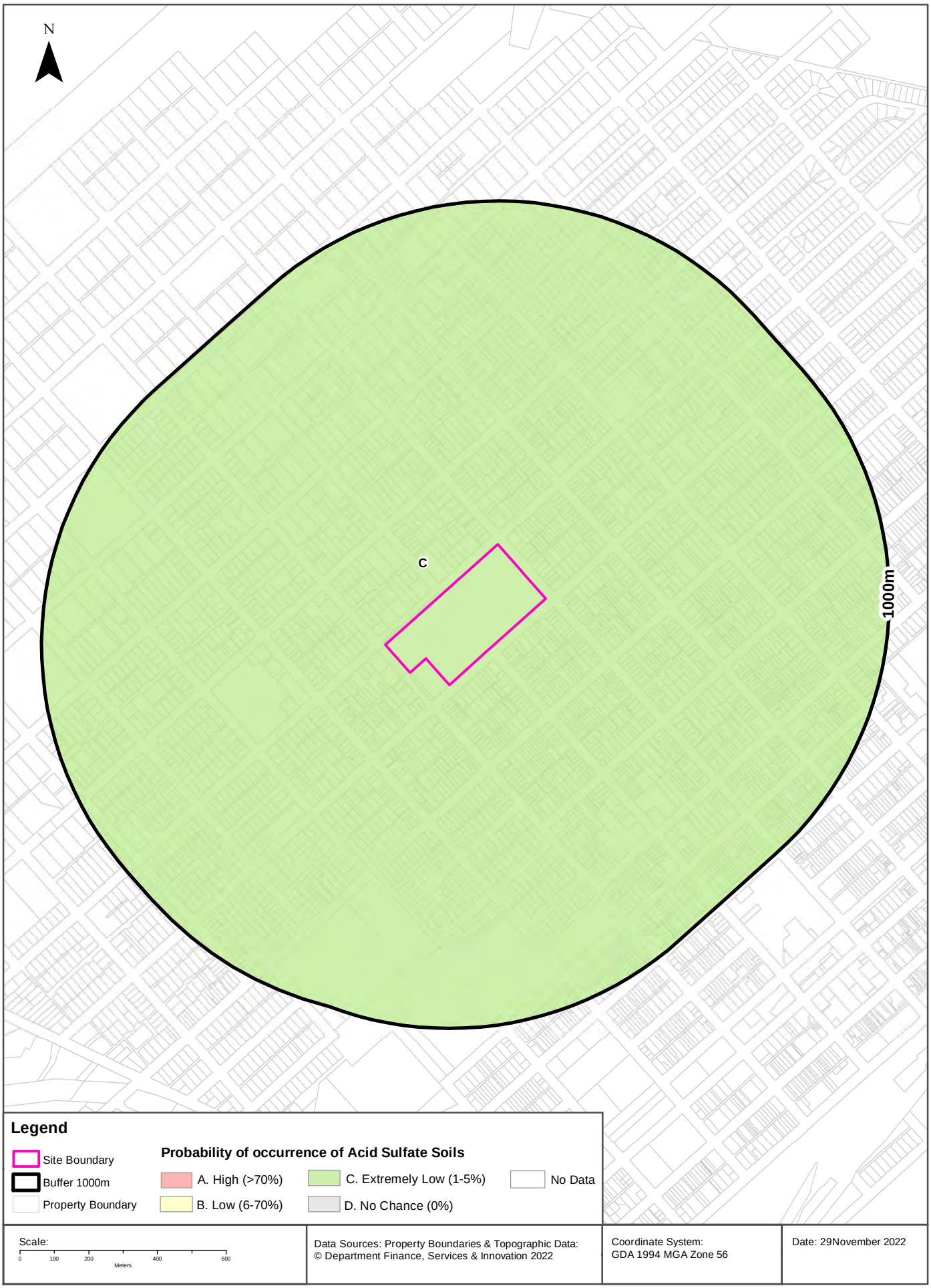
Soil Class	Description	EPI Name
N/A		

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

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Acid Sulfate Soils

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Atlas of Australian Acid Sulfate Soils

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

Class	Description	Distance	Direction
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m	On-site

Dryland Salinity

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

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

No

What Dryland Salinity assessments are given?

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

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

Mining

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

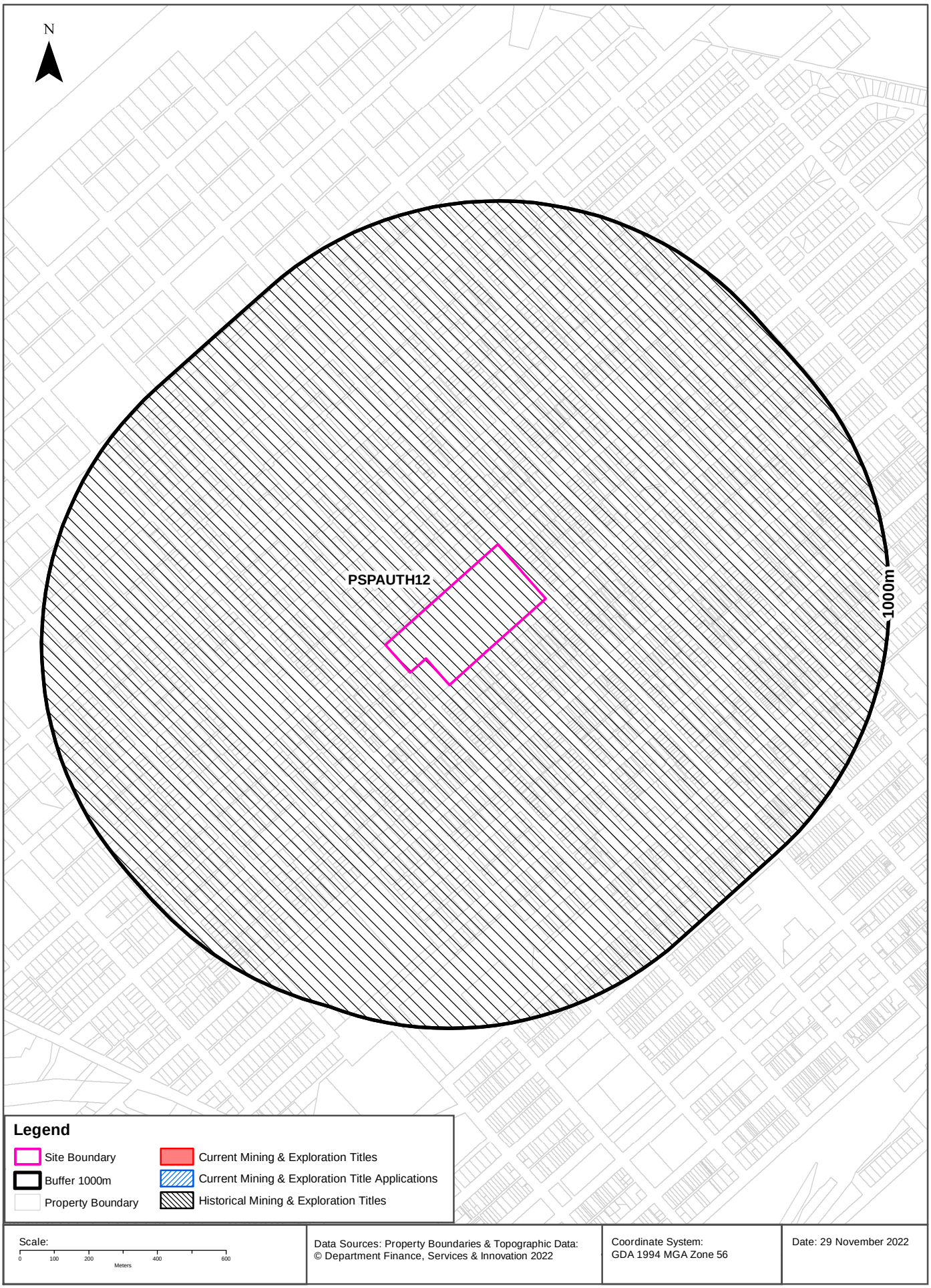
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

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

Mining & Exploration Titles

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Mining

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist	Dir
N/A	No records in buffer								

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

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

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

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

Mining

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist	Dir
PSPAUTH12	HARDIE INFRASTRUCTURE PTY LTD	20060410	20091007	PETROLEUM	Petroleum	0m	On-site

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

State Environmental Planning Policy

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

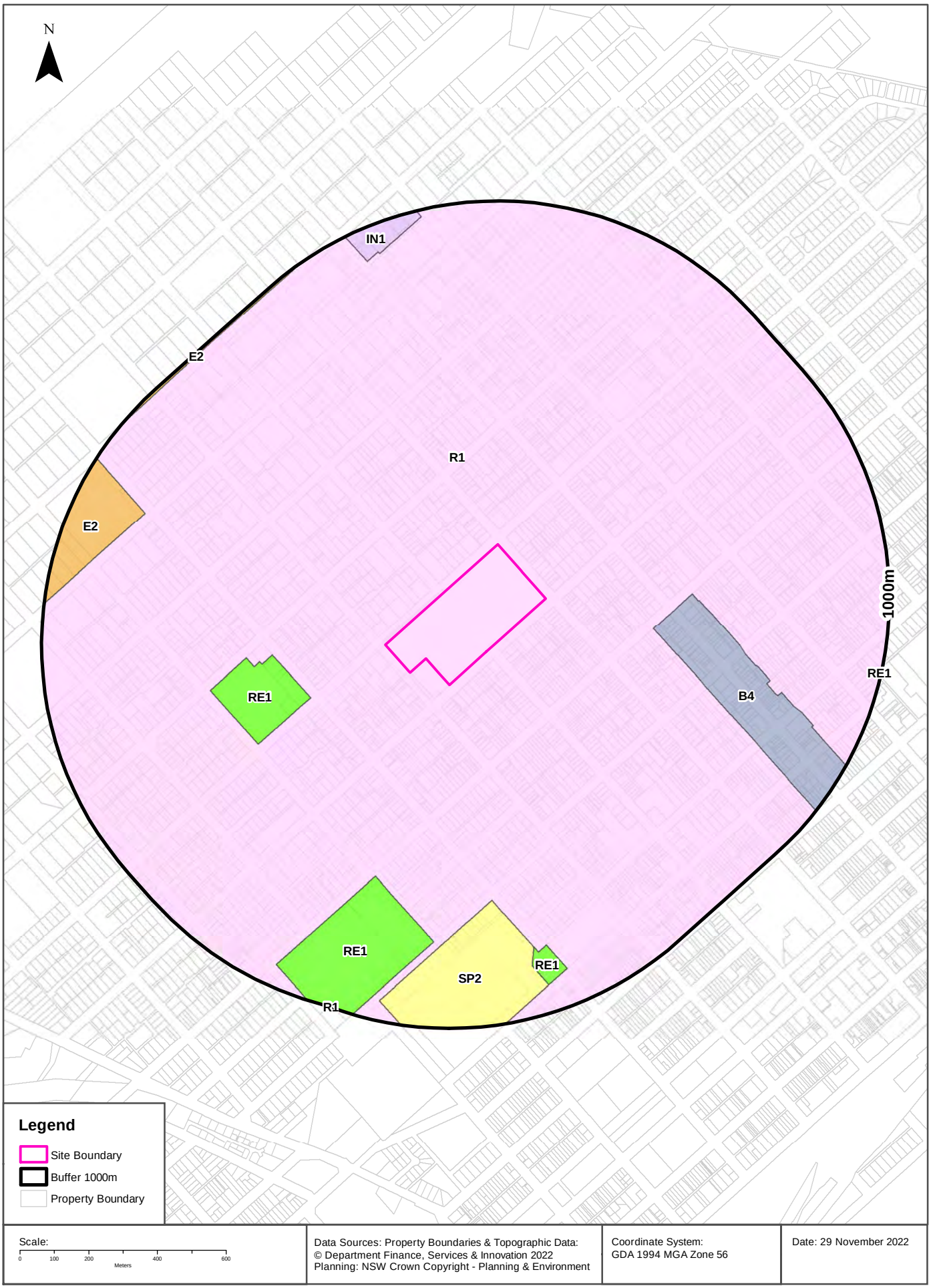
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

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

EPI Planning Zones

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Environmental Planning Instrument

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		0m	On-site
RE1	Public Recreation		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		267m	West
B4	Mixed Use		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		323m	East
RE1	Public Recreation		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		598m	South
SP2	Infrastructure	Water Supply System	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		639m	South
E2	Environmental Conservation		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		797m	West
RE1	Public Recreation		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		801m	South
IN1	General Industrial		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		907m	North
RE1	Public Recreation		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		984m	East

Heritage Items

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Heritage

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Commonwealth Heritage List

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

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

National Heritage List

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

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
105861	City of Broken Hill	Silver City Hwy, Broken Hill NSW	1/04/370/0044	Historic	Minister considering decision within extended period		0m	On-site

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
5045407	St Josephs Convent, Chapel & Site (former)	Sulphide Street, Broken Hill	BROKEN HILL	02/04/1999	00484	1212	609m	South East
5063675	1915 Picnic Train Attack and White Rocks Reserve	Broken Hill	BROKEN HILL	29/06/2018	02002	3156	949m	North West

Environmental Planning Instrument - Heritage

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

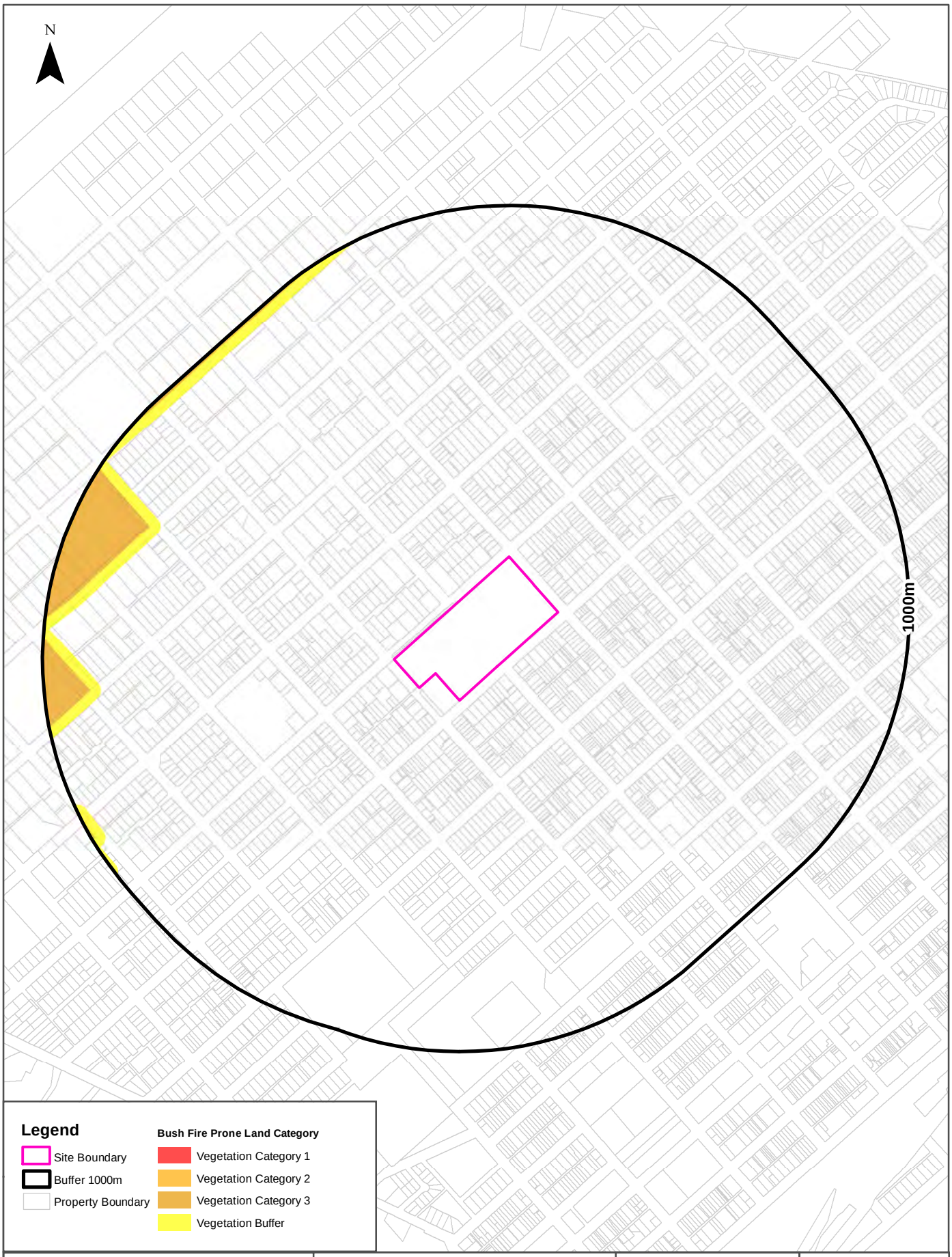
Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I25	Old areas of Broken Hill Hospital	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	0m	On-site

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
C2	Oxide Street Heritage Conservation Area and Willyama Precinct	Conservation Area - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	0m	East
I78	House and shop	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	31m	East
I80	House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	72m	South East
I218	Thomas Street Methodist Church (former)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	216m	South West
I217	Thomas Bakery (former)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	274m	East
I73	House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	287m	North
I79	Houses	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	314m	South East
I72	House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	340m	North
I104	Miraga Day Care Centre (former Oxide Street Methodist Church)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	369m	East
I36	Allison House Student Accommodation (former Bush Children's Hostel)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	374m	East
I94	Mulga Hill Tavern	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	381m	East
I74	House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	514m	North West
I71	House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	536m	East
I56	Sacred Heart Parish Primary School (former Marist Brothers College)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	555m	South East
I200	St Joseph's Convent, Chapel and site (former)	Item - General	State	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	609m	South East
I120	Reservoir, Mica Street Filtration Plant	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	639m	South
I123	Sacred Heart Cathedral	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	660m	South East
I22	Broken Hill Baptist Church	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	704m	East
I16	Bishop's House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	742m	South East
I204	St Peters Anglican Church	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	752m	South East
I124	Hall (former Sacred Heart Church)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	772m	South East
I76	House - ZC-NBHC Bachelors Quarters (former)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	792m	South East

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I37	Caledonian Hotel (former)	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	806m	South East
I101	Old Royal Hotel	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	865m	East
I111	Police House	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	931m	South East
I215	The Towers	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	932m	South East
I233	White Rocks Reserve	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	949m	North West
I128	Scout hall	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	970m	South East

Natural Hazards - Bush Fire Prone Land

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2022. Property Boundaries: © Department Finance, Services & Innovation 2022

Coordinate System: GDA 1994 MGA Zone 56

Date: 29 November 2022

Natural Hazards

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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	761m	West
Vegetation Category 3	791m	West

Ecological Constraints

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Ramsar Wetlands

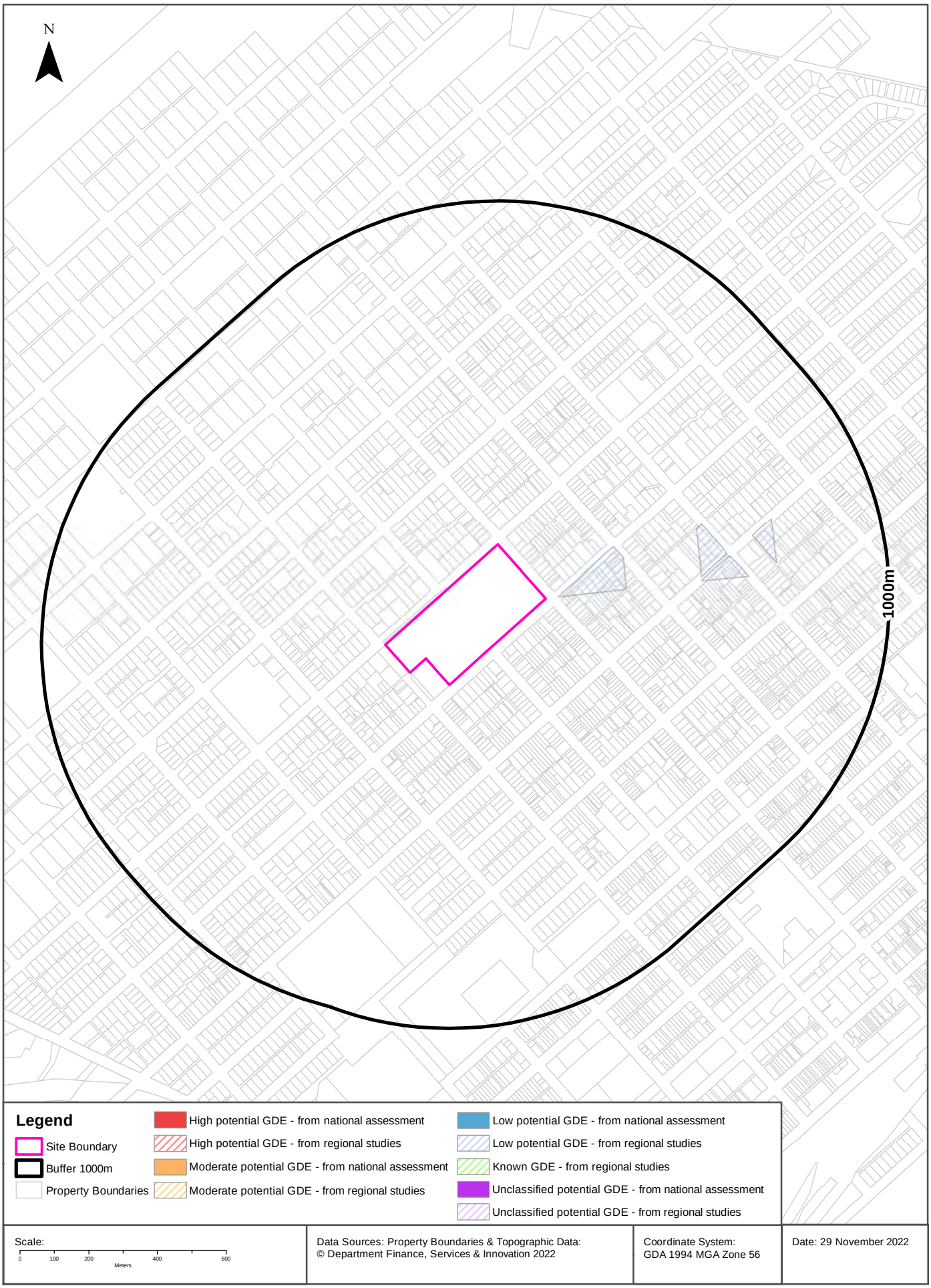
What Ramsar Wetland areas exist within the dataset buffer?

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

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

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Ecological Constraints

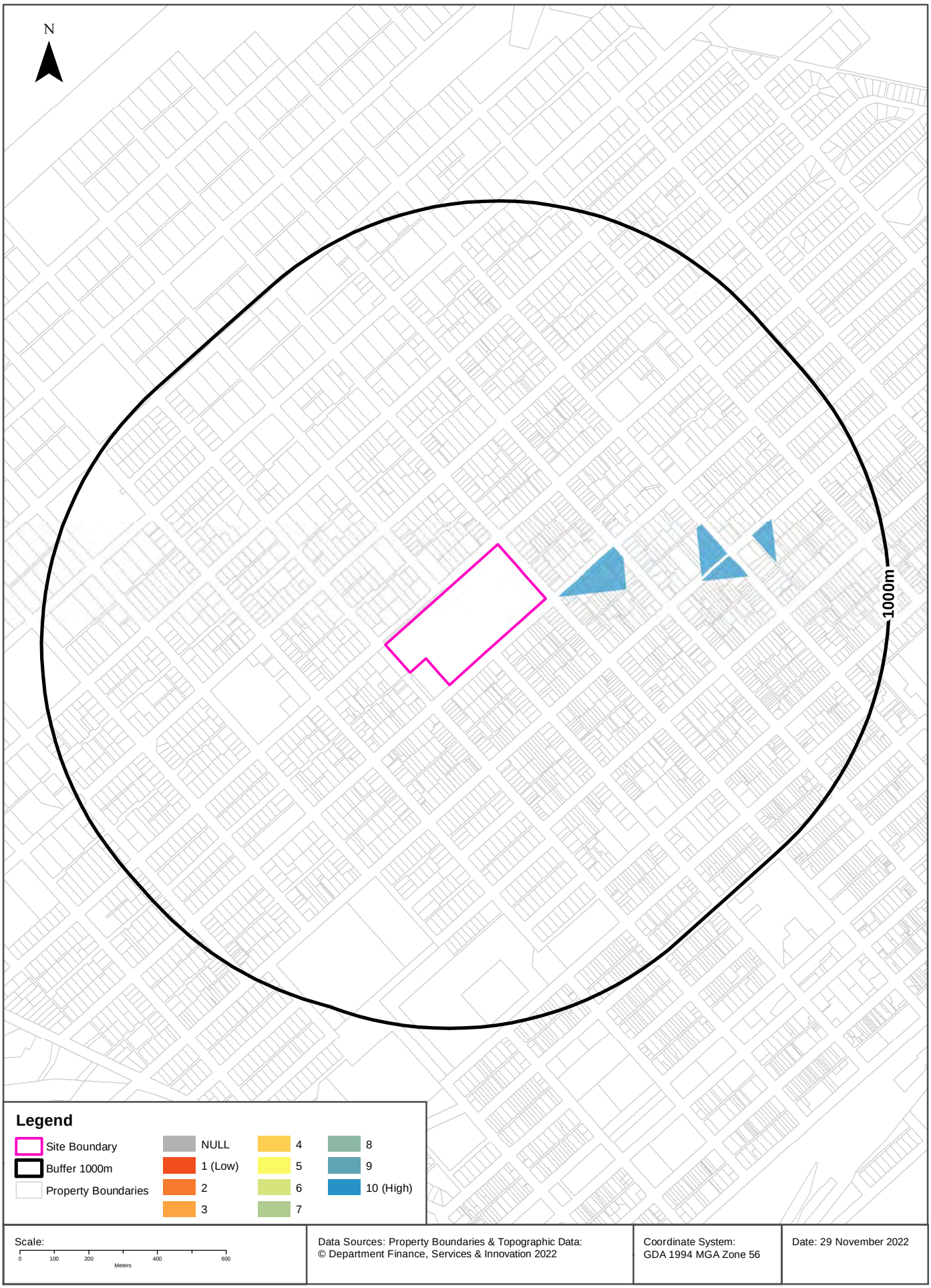
Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	Low potential GDE - from regional studies	Ranges and undulating lowlands of granite and metamorphics.	Vegetation		34m	East

Ecological Constraints - Inflow Dependent Ecosystems Likelihood

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880



Ecological Constraints

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial	10	Ranges and undulating lowlands of granite and metamorphics.	Vegetation		34m	East

Ecological Constraints

Broken Hill Hospital, 176 Thomas Street, Broken Hill, NSW 2880

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	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Apus pacificus	Fork-tailed Swift	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	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	Calamanthus campestris	Rufous Fieldwren	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Calidris ferruginea	Curlew Sandpiper	Endangered	Not Sensitive	Critically Endangered	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Certhionyx variegatus	Pied Honeyeater	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	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Falco hypoleucos	Grey Falcon	Endangered	Category 2	Not Listed	
Animalia	Aves	Falco subniger	Black Falcon	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hamirostra melanosternon	Black-breasted Buzzard	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hydroprogne caspia	Caspian Tern	Not Listed	Not Sensitive	Not Listed	JAMBA
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	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus occidentalis	Night Parrot	Extinct	Not Sensitive	Endangered	
Animalia	Aves	Pyrrholaemus brunneus	Redthroat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Chalinolobus picatus	Little Pied Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Leporillus conditor	Greater Stick-nest Rat	Extinct	Not Sensitive	Vulnerable	
Animalia	Mammalia	Notomys fuscus	Dusky Hopping-mouse	Endangered	Not Sensitive	Vulnerable	

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Mammalia	Pseudomys bolami	Bolam's Mouse	Endangered	Not Sensitive	Not Listed	
Animalia	Mammalia	Sminthopsis macroura	Stripe-faced Dunnart	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Ctenophorus mirrityana	Barrier Range Dragon	Endangered	Not Sensitive	Not Listed	
Animalia	Reptilia	Pseudonaja modesta	Ringed Brown Snake	Endangered	Not Sensitive	Not Listed	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Animalia	Reptilia	Tympanocryptis lineata	Canberra Grassland Earless Dragon	Critically Endangered	Not Sensitive	Endangered	
Plantae	Flora	Acacia carneorum	Purple-wood Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia notabilis	Mallee Golden Wattle	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Acacia rivalis	Creek Wattle	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Eucalyptus leucoxylon subsp. pruinosa	Yellow Gum	Vulnerable	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

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

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

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