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Greater Shepparton City Council

294 McLennan Street, Mooroopna

Preliminary Site Investigation (PSI)

November 2022

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294 McLennan Street, Mooroopna
Preliminary Site Investigation (PSI)

Greater Shepparton City Council

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WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

Table of contents

List of tables

List of appendices

Executive summary

WSP Australia Pty Limited (WSP) was engaged by Greater Shepparton City Council (Council) to conduct a soil contamination assessment in the form of a Preliminary Site Investigation (PSI), in relation to the site, located within Greater Shepparton.

The site consists of a single property owned by Council, but forms part of a large 'corridor' parcel of land, referred to as MWGC, which is located approximately 1.7 km west from the centre of the city of Mooroopna. The site is intended for future redevelopment for a predominately medium-density residential end use. The overall objective of the PSI was to inform a proposed Planning Scheme Amendment, which is required because the site is currently zoned as Farming Zone and needs to be rezoned for General Residential Zone.

The scope of work completed for the PSI comprised; an inception meeting with Council to better understand the site area so the PSI assessment methodology could be optimised; a review of historical information such as aerial images to trace the development of land use, along with establishing the sites general environmental setting and conditions; a confirmatory survey of the site area to 'ground-truth' the findings of desk study; and preparation of this PSI report.

WSP has identified the following sitewide development constraints that may apply to the site, and should be considered further within future development plans:

- **Shallow groundwater:** Shallow groundwater may generally exacerbate localised flooding and impact deeper excavations for building foundations or underground utilities e.g. stormwater drainage or sewerage systems.
- **Drainage and flooding:** Flooding may limit the developable areas of the site or require sustainable urban drainage systems to reduce flooding potential.
- **Ecology:** Ecosystems may constrain or prevent development where protected species exist that require conservation or possibly relocation or ecological offsetting.

WSP has identified the following contamination development constraints based on observed land uses and activities, and where potential contamination within each subzone could constrain redevelopment of the site by affecting suitability for a residential end use, or through requiring remediation:

- **High risk** land uses, which have a high risk of significant contamination being present, in a situation more likely relevant to point sources within the site; potential point source contamination is highly likely to render the site unsuitable for a residential end use; further environmental assessments e.g. an environmental audit is very likely to be required; site remediation may also be needed:

  High risk land uses and activities were not identified at the site, however potential contamination sources such as slurry pits, slurry lagoons or cess pits, agricultural landfills or sheep dips should be considered during future development planning and implementation e.g. as unexpected finds during earthworks.

- **Medium risk** land uses, which have a medium risk of significant contamination being present, in a situation more likely relevant to localised diffuse sources across the site; potential diffuse source contamination may plausibly render the site unsuitable for a residential end use; further environmental assessments e.g. a PRSA or sampling are likely to be required; site remediation is less likely to be needed:

  Medium risk land uses at the site were identified to include historical and recent agricultural activities (more likely associated with cropping) based on the former irrigation channel located at the site and the site forming part of a larger agricultural property.

- **Low risk** land uses, which have a low risk of significant contamination being present, within a situation more likely relevant to regional dispersed sources across the site; potential dispersed source contamination may implausibly render the site unsuitable for a residential end use; further environmental assessments other than a PSI are unlikely to be required; site remediation is unlikely to be needed:

Low risk land uses and activities were not identified at the site.

- **Very low risk** land uses, which have a negligible risk of significant contamination being present, within a situation more likely relevant to absence of sources across the site; potential presence of any contamination is highly unlikely to render the site unsuitable for a residential end use; further environmental assessments other than Planning Authority consideration are very unlikely to be required; site remediation is very unlikely needed:

  Very low risk land uses and activities were not identified at the site.

While noting that only an EPA-accredited Environmental Auditor can definitively determine the suitability of a site for a proposed future land use, it is generally considered that the site will likely be suitable for a residential end use, noting that further consideration will be potentially be required for medium risk land use.

Given the conclusions of the PSI summarised above, in the context of PPN30, it is recommended that a PRSA be undertaken to determine the need for audit. Council should however undertake consultation with an EPA-accredited environmental auditor to assess and define the most appropriate planning pathway for the site, with respect to potential contamination.

1 Introduction

1.1 Authorisation

WSP Australia Pty Limited (WSP) was engaged by Greater Shepparton City Council (Council) to conduct a soil contamination assessment in the form of a Preliminary Site Investigation (PSI), in relation to a portion of the property 294 McLennan Street, Mooroopna located within Greater Shepparton.

The site extends to 4.6 hectares and forms the north-eastern portion of the 294 McLennan Street property, which in turn is part of the southern portion of the adopted Mooroopna West Growth Corridor (MWGC). The MWGC consists of multiple individually or group owned properties within a large 'corridor' parcel of land (approximately 260 hectares), which is located approximately 1.7 km west from the city centre of Mooroopna and is intended for future redevelopment for a predominately medium-density residential end use.

The site location and layout is presented in **Figure 1** in **Appendix A**.

1.2 Project Background

Shepparton and Mooroopna combine to form Victoria's fourth largest regional city, Greater Shepparton. Council's vision is for Greater Shepparton to be a *"thriving economy in the foodbowl of Victoria with excellent lifestyles, innovative agriculture, a diverse community and abundant opportunities"*. Key to fulfilling this vision is the implementation of the Regional City Growth Plan (2021), and the provision of appealing new residential areas, which will make Greater Shepparton an attractive, liveable regional city.

Greater Shepparton is projected to experience significant growth over the next 15 years, with 350 new dwellings required per annum to meet demand. Delivery of new residential areas is critical to meet the demands of this projected population growth and the 6,000 new dwellings needed by 2036. The MWGC is expected to take 30 years to fully develop and will support a population of approximately 4,000 based on approximately 1,600 dwellings.

The PSI is required to assess the suitability of the site for this sensitive residential end use, in terms of potential contamination. The work will ultimately and most importantly inform a proposed Planning Scheme Amendment, which is required because the site is currently zoned as Farming Zone and needs to be rezoned for General Residential Zone. The Planning Scheme Amendment and by extension this PSI are critical to facilitating the subdivision and development of the land and supporting forecasted growth. The PSI will therefore be important in facilitating a medium-density residential estate, where flooding, access, bushfire, and servicing constraints have already been resolved as part of the adopted Mooroopna West Growth Corridor Structure Plan.

1.3 Aims & Objectives

The aims of the PSI were as follows:

- Assess the suitability of the site for a sensitive residential end use, based on the potential for contamination from historical or current sources, both onsite and in the surrounding area.
- Better understand potential development constraints that may be associated with ground risks, considering potential soil or groundwater contamination and preliminary geotechnical hazards.
- Consider the results of the PSI within the context of new contaminated land duties, as associated with Victoria's Environment Protection Act (2017), which was enacted on July 1, 2021.

- Identify potential future assessment pathways within the context of new Planning Practice Note 30 (PPN30), the new Environmental Audit system, and potential contamination identified at the site.
- Provide recommendations regarding possible requirements for further environmental assessment work specific to the site and its conditions i.e. outline scope of work that may be needed.

The overall objective of the PSI was to inform a proposed Planning Scheme Amendment, which is required because the site is currently zoned as Farming Zone and needs to be rezoned for General Residential Zone. The Planning Scheme Amendment and by extension this PSI are critical to facilitating the subdivision and development of the land.

1.4 Scope of Works

1.4.1 Task 1: Inception Meeting

For Task 1, WSP facilitated an Inception Meeting with Council. The meeting provided an opportunity to better understand the site area so the PSI assessment methodology could be optimised.

The detailed scope of work for this task comprised the following:

- Review of the project background context and reconfirmation of Council's objectives for the site.
- Discussion on the proposed scope and methodology to address any queries or concerns.
- Discussion on program and milestones to ensure alignment to Council's schedule.
- Discussion on future assessment pathway and how this might be optimised.

1.4.2 Task 2: Desk Study Research

For Task 2, WSP reviewed historical information such as aerial images to trace the development of land use, along with establishing the site general environmental setting and conditions.

For work in this task, desk study information was collected from sources both in the public and private domains. The key resource used was a Lotsearch Enviro Pro report (www.lotsearch.com.au) that contains historical aerial imagery and mapping and provided coverage across the site with a 150 m buffer in all directions.

The detailed scope of work for this stage comprised the following:

- **Property Identification** including review of:
  - Legal descriptions.
  - Current certificates of title.
  - Lot boundaries etc.
- **Current and Proposed Use** including review of:
  - Current activities at the site.
  - Surrounding land uses.
  - Land use zoning and overlays
  - End uses.
  - Possible redevelopment types.
- **Site History** including review of:
  - Anecdotal information.
  - Discussion with relevant persons familiar with the site, as nominated by Council.
  - Discussion with relevant Council and DELWP personnel familiar with the site.
  - Review of previous environmental or background reports including flood risk assessments.
  - DELWP mine subsidence and mining license register and GeoVic interactive mapping database.
  - Aerial photos and historical maps.
  - Local literature etc.

- **Environmental / regulatory** including review and / or consultation for:
  - EPA Priority Sites Register.
  - Nearby completed Environmental Audit reports.
  - Regulatory notices.
  - Council supplied information.
  - Planning authority information.
  - Water authority information.
- **Environmental Setting** including review of:
  - Groundwater database search for registered wells within the 2 km radius of the site and information on groundwater use.
  - Hydrology / surface water.
  - Ecological features.
  - Wetlands.
  - Acid sulphate soils etc.
- **Local Geology and Hydrogeology** including review of:
  - Drilling and available bore logs.
  - Hydrogeological maps.
  - Geological maps etc.

1.4.3 Task 3: Confirmatory Survey

For Task 3, WSP undertook a confirmatory survey of the site with the purpose being to 'ground-truth' the findings of desk study research in Task 2 and in particular any potential point sources of contamination, where identified.

The detailed scope of work for this task comprised the following:

- Use of existing access road network to complete a drive-by survey of accessible areas of the site, to observe the following:
  - Site owner or management interviews.
  - Operational activities, both current and historic.
  - Site topography and surrounding land uses.
  - Chemical handling and storage, including above and underground storage tanks.
  - Waste management, water and wastewater management.
  - Air and noise emissions.
  - Hazardous building materials.
  - Potential sources of soil and groundwater contamination.

1.4.4 Task 4: PSI Reporting

For Task 4, WSP prepared this PSI report with the detailed scope of work for this task comprising the following:

- Reporting on Task 2: Desk Study Research and Task 3: Confirmatory Survey.
- Identification of potential contaminants of concern from historical and current land uses activities, including consideration of surrounding offsite influences (as identified).
- Development of a preliminary Conceptual Site Model (CSM), assessing contamination sources, pathways and receptors and potential risks posed to current and future human and ecological risk receptors.
- Results of the risk assessment from high, medium, low, and very low risk zoning.
- Summary of potential contamination impacts identified or 'areas of potential concern'.

- Conclusions with respect to the objectives of the PSI and commentary on site suitability.
- Advice and recommendations regarding the PSI findings including:
  - New contaminated land duties in Victoria i.e. ‘Duty to Notify’ and ‘Duty to Manage’.
  - The likelihood of contamination and its potential to affect the planning proposal i.e. residential development as part of MWGC.
  - Whether a risk-based remediation or management strategy can be derived to make the site suitable for use.
  - Opinion on whether further assessment is needed i.e. PRSA, Environmental Audit or intrusive investigations.
  - Outline recommendations for likely foundation solutions for new dwellings, pavement and infrastructure design.
- Figures with appendices as appropriate.

1.5 Report Limitations

General limitations associated with carrying out this PSI are provided in **Section 10**. No specific limitations were encountered during the course of this investigation.

2 Project Technical Framework

2.1 Environmental Protection Act 2017

The Environment Protection Act 2017 (EP Act) was enacted on 1 July 2021 and changes Victoria's focus for environment protection and human health to a prevention-based approach, underpinned by the general environmental duty (GED). The GED requires everyone, including businesses and individuals, conducting activities that pose a risk to human health or the environment from pollution or waste, to understand those risks and take reasonably practicable steps to eliminate or minimise them.

2.1.1 New Contaminated Land Duties

With respect to contamination, the EP Act includes special provisions within Regulations 8 to 15 which specifically concern the new duty to notify (DtN) of contaminated land, and the duty to manage (DtM) contaminated land. Notably, the new contaminated land duties apply to *"land under the management or control of a person"* and establishing which parties are in management or control of a site is a key step in apportioning these responsibilities.

Noting Council ownership and management of the site, which comprises of vacant land use, Council are considered to be 'in management or control' of the site. It is important to understand the contamination status of the site, to assist Council in understanding whether any environmental liabilities apply to the site under the new legislation.

The key contaminated land duties that are pertinent to the site are as follows:

- **Duty to Notify**: The duty of persons in management or control of land to notify EPA as soon as practicable if the contamination may pose a significant risk to human health or the environment.
- **Duty to Manage:** The duty of persons in management or control of land to minimise the risks of harm to human health and the environment from confirmed contamination.

2.1.2 New Environmental Audit System

One possible outcome of the PSI may be the requirement for undertaking further environmental work such as the new Preliminary Risk Screen Assessment (PRSA) and / or a statutory Environmental Audit within the restructured audit system. Given the historical and ongoing agricultural / residential land uses of the site, and the low risk for significant contamination, one goal of the PSI was to satisfy stakeholders that a statutory environmental audit is not required in all cases and a PRSA may be more appropriate.

Further discussion of how the PRSA and environmental audit may relate to the site is provided in the following **Section 2.2.**

2.2 Contamination & Planning System

2.2.1 Planning Practice Note 30 (PPN30)

With the introduction of the EP Act in 2021, existing guidance regarding the relationship of potential contamination and the planning system has required revision to account for the new legislation. Planning Practice Note 30 (PPN30) was published in July 2021 and provides updated guidance regarding the role of the planning system in helping to assess the potential for contamination at a site, and advice concerning the level of environmental assessment work that may be required.

A planning or responsible authority must ensure that the effects of the environment on a planning proposal are considered, and that potentially contaminated land is suitable for its proposed use. PPN30 provides a recommended approach to assessing potentially contaminated land as presented in **Table 2.1,** which the site scenario may be compared against, as follows:

Table 2.1 PPN30 (2021) recommended approach to assessing potentially contaminated land

PLANNING PROPOSAL		POTENTIAL FOR CONTAMINATION	
		HIGH	MEDIUM
Proposed uses defined in Ministerial Direction No. 1, the EAO, and clause 13.04-1S			
— Sensitive uses: — Residential use — childcare centre — kindergarten — pre-school — primary school — Children's playground — Secondary school	New use or buildings and works associated with a new use	**A**	**B**
	Buildings and works associated with an existing use	**B**	**B**
Proposed other land use			
— Open space — Agriculture — Retail or office — Industry or warehouse	New use, or buildings and works associated with a new or existing use	**C**	**D**

	PLANNING SCHEME AMENDMENT	PLANNING PERMIT APPLICATION
A	— PRSA or audit option applies — Proceeding directly to an audit is recommended.	— PRSA or audit option applies — Proceeding directly to an audit is recommended.
B	— PRSA or audit option applies — PRSA to determine need for audit is recommended.	— PRSA or audit option applies — PRSA to determine need for audit is recommended.
C	— PSI to inform need for audit is recommended	— PSI to inform need for audit is recommended
D	— Planning authority to document consideration of potential for contamination to impact proposal	— Responsible authority to document consideration of potential for contamination to impact proposal

2.2.2 Application to the site

WSP has reviewed PPN30 within the context of the MWGC project, and notes that with respect to redevelopment of agricultural land to a sensitive residential end use, the guidance states that agriculture and animal production may be associated with a **medium potential for contamination**. The guidance however goes on to state that while most agricultural land is **not likely to be contaminated** i.e. a low potential, the potential for specific contaminating activities to have occurred over time should be considered, including:

- Commercial use of pesticides (herbicides, fungicides etc).
- Biosolids application to land for soil fertilisation.
- Farm waste disposal, possibly including landfilling.

WSP notes that for the site (and MWGC), and considering the above recommendations in PPN30, for a proposed sensitive residential end use that involves a new use or buildings, a PRSA to determine the need for an environmental audit is recommended. PPN30 provides further guidance regarding how the PRSA and environmental interact, as follows:

- The role of a PRSA is to determine the need for an environmental audit. The decision whether to undertake a PRSA or proceed directly to audit will depend on the potential for contamination and the proposal.
- A PRSA is recommended for scenarios where it is uncertain whether an audit is warranted, specifically those with lower risk of contamination i.e. medium potential in **Table 2.1**.
- If a PRSA process has been undertaken, the PRSA statement may either conclude that (1) no environmental audit is needed or (2) may conclude that an environmental audit is warranted to determine site suitability.

PPN30 states that if a PSI has been undertaken, the findings can inform the planning or responsible authority in deciding whether an environmental audit, or alternative assessment or management measures, are appropriate, or in concluding that no further action is needed. In this case, WSP believes that an effective PSI can drive a project towards the PRSA assessment pathway (rather than an environmental audit), as is preferable for the site.

2.2.3 Contamination Risk Scheme

Because the potential for contamination being associated with agricultural land and animal production land uses is less clearly defined in PPN30, WSP has considered this risk further within the context of site. We consider that while the wider area of the MWGC is not likely to be contaminated (low risk), there may be certain areas where more concentrated activities have occurred e.g. farm yards, farm buildings and possibly residences (medium risk). There may also be higher risk activities within these areas that should also be considered e.g. bulk fuel or chemical storage, slurry pits, slurry lagoons or sheep dips (high risk). By contrast, there may be also areas such as native forest or bushland that may be considered ‘untouched’ and unlikely to be associated with contamination (very low risk).

Based on these considerations, and to support the identification and definition of the PSI, the recommended approach to assessing potentially contaminated land provided in PPN30 has been aligned to the following:

- **Risk Level:** High risk, Medium risk, Low risk or Very low risk designations for contamination being present.
- **Potential for Contamination:** Scenarios where contamination may be manifested for agricultural land uses.
- **Example Land Uses:** Range of potentially contaminative agricultural activities, relevant to risk levels.
- **Contaminants of Concern:** Range of contaminant types or categories generally associated with activities.

The resultant contamination risk scheme, as presented in **Table 2.2** below, has been used throughout the PSI:

Table 2.2 PSI Risk Scheme and PPN30 Context

RISK LEVEL	POTENTIAL FOR CONTAMINATION	PPN30 CONTEXT	EXAMPLE LAND USES	CONTAMINANTS OF CONCERN
High risk	**High risk** of significant contamination being present; situation more likely relevant to **point sources** within the site.	**Scenario A:** Proceeding directly to an audit is recommended	— Farmyards and farm buildings with bulk fuel or chemical storage e.g. USTs. — Slurry pits, slurry lagoons or cess pits with animal wastes (excreta). — Agricultural landfills, possibly including animal burial after culling. — Sheep treatment areas for external parasites (sheep dips).	Comprising contamination point sources from fuels, oils, pesticides, fertilisers, herbicides (bulk storage); faecal coliforms, hazardous gases (slurry pits); bio-hazards (landfills), arsenic and dieldrin (sheep dips).
Medium risk	**Medium risk** of significant contamination being present; situation more likely relevant to localised **diffuse sources** across the site.	**Scenario B:** PRSA to determine need for audit is recommended.	— More intensive farming such as market gardening, horticulture or cropping. — Applications of biosolids as fertiliser e.g. vineyards, pasture, arable land. — Stockpiles of soil, rubble, other wastes, laydown areas for old farm machinery. — Ancillary land uses in agricultural areas e.g. builders' yards, vehicle mechanics.	May include diffuse but more localised impacts from the application of fertilisers, pesticides or herbicides, possibly small quantities of fuels, oils, paints, solvents, metals or ACM from yards.
Low risk	**Low risk** of significant contamination being present; situation more likely relevant to regional **dispersed sources** across the site.	**Scenario C:** PSI to inform need for audit is recommended.	— Expanses of agricultural fields used mainly for grazing of livestock. — Areas unlikely to have required use of fertilisers, pesticides or herbicides. — Farm houses and low density rural residences, possibly with septic tanks. — Horse training facilities, running tracks, paddocks and stables.	Likely limited to dispersed regional contaminants in groundwater or surface water e.g. faecal coliforms from residential septic tanks, or nitrates and nitrites from application of fertilisers.
Very low risk	**Negligible risk** of significant contamination being present; situation more likely relevant to **absence of sources** across the site.	**Scenario D:** Planning authority to consider any potential for contamination	— Land unaffected by European settlement in Victoria i.e. pre-European conditions. — Native forests or bushland subject to low-impact management measures.	Only naturally occurring contaminants associated with ambient local conditions, and excluding impacts from controlled burns and possibly the use of firefighting foams containing PFAS.

3 Site Identification

3.1 General Site Details

The site location and layout is presented in **Figure 1** in **Appendix A**, while pertinent site details are summarised in **Table 3.1** below:

Table 3.1 Pertinent Site Details

PARAMETER		DETAILS
Lot and Plan number		The site comprises of a single parcel of land being Lot 1 PS649091. The site forms part of a larger property consisting of five parcels referred to as 294 McLennan Street, Mooroopna.
Suburb		Mooroopna
Address		294 McLennan Street, Mooroopna (part of)
Site Owner(s)		Greater Shepparton City Council
Primary Interest Holder		Greater Shepparton City Council
Current Land Use		Vacant Land
Past Land Use		Agricultural use (likely forage and / or fodder cropping)
Site Investigation Area		Approximately 4.1 hectares (ha)
Local Government Authority		Greater Shepparton City Council
Coordinates (centre of site):		N: 5971129 E: 350854 | N: 5971129 E: 350854
Site Zoning		Farming (FZ)
Overlays		Development Contributions Plan Overlay - Schedule 3 (DCPO3) Development Plan Overlay - Schedule 14 (DPO14) Land Subject to Inundation Overlay (LSIO) Specific Controls Overlay – Schedule 3 (SCO3) Designated Bushfire Prone Area (portion of)
Surrounding Land Use	**North**	Irrigation drainage channel followed by vacant bushland and agricultural land (forage / fodder crops).
	East	Land currently under residential development (earthworks) followed by residential (constructed).
	South	Dirt access road, followed by flood retarding basin and bike path, further south vacant land and McLennan Street.
	West	Dirt access road, followed by flood retarding basin and bike path, vacant land and Excelsior Avenue.

3.2 Site Planning Scheme Zone

The site features one Planning Scheme Zone as displayed in planning reports in the Lotsearch Enviro Report provided as **Appendix C.**

Farming Zone (FZ) is designated across the whole site and is intended to provide for the use of the land for agriculture; encourage retention of productive agricultural land; ensure that non-agricultural uses, including dwellings, do not adversely affect the use of the land for agriculture; encourage the retention of employment and population to support rural communities; and encourage use and development of land base on comprehensive and sustainable land management practices and infrastructure provision.

3.3 Cultural Heritage Sensitivity

Areas of Cultural Heritage Sensitivity as specified in Division 3 of Part 2 in the Victorian Aboriginal Heritage Regulations 2018 were not identified at the site. The closest area was located approximately 780 m to the east of the site. Note that every natural surface water body in Victoria has an indigenous buffer zone of 200 m, where land is considered as one with the water.

3.4 Natural Hazards

The majority of the site (north, west and southern portions) is within a designated bushfire prone area. Although records do not indicate any fire history (e.g. fuel reduction burns, bushfires etc.) onsite and / or within a 1 km radius of the site.

The majority of the site is within a 1 in 100 year flood extent with the exception of a small portion within the central / north portion of the site.

4 Site Environmental Setting

4.1 Geology & Soils

4.1.1 Regional / Site Geology

A review of the Geological Survey of Victoria Shepparton map, Sheet 7925, scale 1:100,000 (Tickell, et. Al 1974), indicates that the general regional geology underlying the site and within its vicinity comprises Quaternary aged Shepparton Formation containing unconsolidated to poorly consolidated mottled variegated clay, silty clay with lenses of polymictic, coarse to fine sand and gravel.

No records of historical mine shafts were reported at the site, and no evidence of mining was observed during the site inspection.

WSP was not made aware of any previous environmental investigations (i.e. with respect to contaminated land) that included geological works (i.e. drilling) having been conducted within the site area. A review of available information from groundwater bores and exploratory boreholes from online sources (i.e. Visualising Victoria's Groundwater [VVG] at www.vvg.org.au) and the Lotsearch Enviro Report indicated that no bores had been advanced within the site. However, the specific geology / ground conditions available from borehole locations closest to the site (approximately 620 m away) indicated the following lithology may be encountered:

- **Surface to 10.5 m, CLAY:** Red brown to yellow brown clay.
- **10.5 m to 15.5 m, SAND:** Grey to yellow sand, wet, becoming fine then coarse with depth.

A review of the Australian Soil Resource Information System (ASRIS) website indicated that the site area has a low probability (6-70%) of occurrence of Acid Sulfate Soils (ASS). The site is not located within either coastal acid sulfate made land or prospective areas.

4.2 Hydrology & Flooding

4.2.1 Regional Hydrology

The site does not contain any surface bodies, however, there does appear to be two former small distributary irrigation channels that cross the site orientated north to south and east to west. The irrigation channel orientated north / south exits the site in south via underground piping and discharges into the drainage retarding basin located offsite to the south. The area to the southwest of the site has been partly developed as a floodway for urban stormwater drainage, with the aforementioned retardation basin for new residential development existing between the floodway and the site.

In addition to the above, the Goulburn River is present approximately 2.2 km to the east and Gemmill Swamp 2 km to northeast of the site. Based on site topography, surface water runoff is expected to flow to the south at the site with regional surface water runoff to the east towards the Goulburn River, likely dominated by drainage channels / ditch networks in the surrounding areas.

4.2.2 Local Flood Conditions

A letter was previously prepared by Cardno Lawson Treloar (Cardno) as part of the greater Mooroopna West Outline Development Plan (ODP). A brief review of this document (and supporting appendix reports) titled *Mooroopna West ODP Flood Modelling*, November 2008 was undertaken by WSP.

Supporting reports in appendices to the document notes that there are three main flooding mechanism in Shepparton-Mooroopna area, with those being local rain, Goulburn River flooding and Broken River / Seven Creeks flooding, with

the dominant flooding mechanism being form the Goulburn River dominant events. The maximum flood depth for a 100-year Average Recurrence Interval (ARI) Goulburn dominant event across the site is expected to range between 0 to 0.4 m.

4.3 Hydrogeology & Groundwater Quality

4.3.1 Regional Hydrogeology

Based on data obtained from VVG accessed in June 2022, depth to water table at the site is expected to be less than 5 m across the site i.e. very shallow groundwater.

The principal aquifer beneath the site is referred to as the Shepparton Formation aquifer system. The groundwater regime in the Shepparton Formation aquifer system comprises mostly low permeability clays and silts with isolated lenses of sand and gravel.

Based on the expected depth to groundwater and topography across the site, regional groundwater flow is anticipated to flow north to northeast towards the Goulburn River and Gemmill Swamp (2 km northeast), with potentially some local discharge into the drainage retarding basin adjacent to the south and west of the site during periods of high groundwater elevation.

The VVG website indicates that groundwater in the local area is expected to contain 1,000 mg/L to 3,500 mg/L total dissolved solids (TDS). Based on these TDS concentrations, the regional aquifer is considered to be defined as within Segment B and has the potential to be used for the following environmental values (as defined in the Victorian Government Gazette, *Environmental Reference Standard* (ERS), dated 26 May 2021).

For Segment B groundwater, the following environmental values must be protected:

- Water dependent ecosystems and species;
- Potable mineral water supply;
- Agriculture and irrigation (irrigation);
- Agriculture and irrigation (stock watering);
- Industrial and commercial use;
- Water-based recreation (primary contact recreation);
- Traditional Owner cultural values;
- Buildings and structures; and
- Geothermal properties.

According to the VVG bore database, there have been no recorded bores advanced within the site area, and 114 recorded bores advanced within a 2 km radius of the site boundary. Of these 114 bores:

- 100 groundwater bores were reported as being installed for investigation or observation purposes;
- 13 groundwater bores were reported as being of domestic, irrigation and / or stock use; and
- 1 groundwater bore was installed for miscellaneous use.

The total depth of relevant groundwater bores in the database ranges from 7 m to 26 m. Full details of the bore search are provided in the Lotsearch Enviro Report provided in **Appendix C**.

4.4 Ecology, Flora & Fauna

The site contains an endangered ecosystem (Plains Woodlands or Forests) across the majority of the site. These ecological resources would require consideration in future development, and a full ecological survey would be recommended to assess their value.

4.5 Conclusions for Environmental Setting

The site is generally underlain by Quaternary aged Shepparton Formation. A review of publicly available borehole logs in the area shows that the site is more specifically underlain by red-yellow-brown clay, with interbedded sand and clay from depths varying between 5 and 15 m. There is a low potential for ASS to exist across of the site.

The site does not contain any active surface water bodies, however former small distributary irrigation channels appear to exist onsite. A drainage retardation basin runs along the southern-western boundary of the site where the onsite north / south orientated irrigation channel discharges via underground piping. The Goulburn River is present approximately 2.2 km to the east and northeast along with Gemmill Swamp, located 2 km to the northeast of the site. Surface water runoff at the site is expected to flow to the south into the drainage retardation basin. The majority of the site is within the 1 in 100-year flood extent.

Based on registered bores, depth to groundwater across the zone is expected to be around 10 m below ground level, however VVG suggests that depth to groundwater may be less than 5 m i.e. very shallow groundwater across the site. Based on the expected depth to groundwater and topography across the site, regional groundwater flow is anticipated to flow north to northeast towards the Goulburn River and Gemmill Swamp.

The site contains an endangered ecosystem (Plains Woodland or Forests) across the majority of the site.

5 Site History Review

5.1 Basis of Site History Review

To complete a comprehensive review of the site history within the context of the wider local area, WSP has referred to the following documents/information sources:

- Historical aerial images as contained in Lotsearch Enviro Report, dating from 1945 to the present date.
- Historical aerial images provided in online sources e.g. Nearmap (nearmap.com), Google Earth.
- Historical mapping as contained in the Lotsearch Enviro Report and dated 1984.

This information has ultimately been used to develop a site history summary.

5.2 Historical Aerial Images & Maps

The site history has been further investigated using historical aerial images taken between 1945 and 2021. The historical aerial photographs are included in the Lotsearch Enviro Report in **Appendix C**. Information relevant to the PSI is summarised in **Table 5.1**, below:

Table 5.1 Summary of Summary of Site History Timeline of the site

SITE HISTORY (TIMELINE)	ONSITE	SURROUNDS
1945	Agricultural / grazing land forming part of a greater property.	Agricultural / grazing land, bushland located adjacent to northwest surrounding what appears to be a water course. Farm house and associated infrastructure for the greater property that includes site, appears to be located to the south with a watercourse between site and house.
1958	No significant change onsite from 1945 image. Distributary irrigation channels appear visible onsite.	Vegetation appears to have been cleared within bushland to northwest of site. Flooding appears present within watercourse south of site.
1969	Harvesting of agriculture land appears to be in progress. Unable to confirm whether cropping or cutting for hay.	Harvesting of agriculture land to the north appears to be in progress. Irrigation channels surrounding site appear to contain water.
1977	Site appears to be vacant land with no obvious crops.	A small number of additional buildings (appear residential) have been constructed to the southeast of the site on the other side of watercourse. Onsite irrigation channel discharging to the south into watercourse is visible.
1980	No significant change onsite from 1977 image.	Minor residential development to the southeast of the site (on other side of watercourse).
1990	No significant change onsite from 1980 image.	A new irrigation appears to have been constructed to the northwest of the site within the bushland area.
2009	No significant change onsite from 1990 image.	No significant change onsite from 1990 image.
Dec 2013*	No significant change onsite from 2009 image	Major earthworks have commenced within watercourse to the west/south of site and further to the southeast including removal of greater property farmhouse.
Nov 2014*	No significant change onsite from 2013 image	Construction of drainage retardation basin to west / south / southeast of site appears complete with surface water dam / holding pond constructed between site and basin. Significant earthworks have occurred to the east with significant residential development further east.
2015	Earthworks appear to have been undertaken within southeast corner of the site likely associated with residential development east of the site.	Earthworks have continued to the east with significant residential development further east.
2021	No significant change onsite from 2015 image	Further residential development has occurred to the east of the site.
Apr 2022*	Earthworks (extension of dirt road / access) appear to have occurred within northeast corner of site associated with the residential development to east.	Further residential development has occurred to the east of the site with roads clearly defined.

* Nearmap aerial images

5.3 Regulatory Information Search

Findings of the regulatory notices search are provided in the Lotsearch Enviro Report in **Appendix C**. No pertinent information or records were available for the following regulatory categories, either onsite or within a 1 km radius of the site:

- EPA Priority Sites
- EPA Regulatory Notices
- EPA PFAS Investigations
- Environmental Audits
- Groundwater Quality Restricted Use Zones.
- EPA Works Approval / Licensed Activities.
- Waste Management Facilities.
- Landfill Registers.
- Gasworks and Liquid Fuel Facilities.

We note that properties previously audited may be present within a 1 km radius of the site, however 53V audit reports completed prior to 2014 are not publicly available through the EPA online audit report register.

5.4 Historical Business Directories

The site history has been further investigated using historical records (i.e. Universal Business Directory and McDougall Directory) recorded between 1905 and 1991. The historical business directory listings are included in the Lotsearch Enviro Report provided in **Appendix C**. Information relevant to the PSI is summarised below:

- There were no historical business directory listings for the site i.e. onsite.
- One road match was identified for McLennan Street with several businesses listed in Mooroopna:
  - 1970: Mooroopna Motors
  - 1970: Caltex Service Station. It is noted that a Caltex Service Station is located at 40 McLennan Street approximately 1.2 km east of the site.
  - 1970: Regency Dry Cleaners
  - 1991: Stuart Davidson Petroleum Pty Ltd. It is considered likely that this business is the same as the 1970 Mooroopna Motors.

5.5 Conclusions for Site History Review

The review of all available historical information sources in this section (above) indicated that the majority of the site appears to have been occupied by agricultural land uses (inferred grazing or cropping) and/or unoccupied land for the entire recorded history of the site. In recent years, a small portion of the site along the eastern boundary has undergone earthworks associated with the residential development occurring adjacent to the east of the site. Any contamination impacts from historical grazing or cropping activities are considered likely to have since dispersed and degraded.

There were no historical business directory listings recorded at the site, and no listings of potentially contaminative activities within 150 m of the site.

6 Site Inspection

6.1 Site Inspection Observations

A site inspection was completed on 27 April 2022 by WSP. A photographic record of the site inspection is provided as **Appendix B**.

The following key features were observed onsite during the site inspection:

- The site was vacant land with no buildings or aboveground structures observed.
- The surface of the site consisted of vegetation i.e. grass covering the majority of the site with several small trees / shrubs located within the western portion of the site. Bare soil was observed within the south-eastern portion of the site in an unfenced area.
- Two spoon drain channels inferred to be former irrigation channels were observed orientated in north / south and east / west orientations crossing within the central part of the site as follows:
  - The north / south channel made two 90 degrees kinks within the north-western portion of the site before continuing offsite to the north and via underground piping to the south before discharging into the drainage retarding basin located offsite to the south.
  - The east / west channel commenced from the eastern boundary before terminating within the western portion of the site.
  - Exposed sections of concrete piping and metal piping were observed within the channel in two separate areas.
- Excavation works had recently occurred onsite within the northeast corner of the site with a small area dug of approximately 0.75 m in depth. The area excavated appears to be associated and a continuation of the road currently under construction (and residential development) on the adjoining property to the east. Minor stockpiles of soil, likely associated with the excavation works, were located along the eastern boundary south of the excavation.
- No evidence was observed to suggest the presence of any underground infrastructure such as fuel storage tank, sheep dipping pits etc.
- No waste dump piles, dumped rubbish or evidence to suggest areas of buried waste were observed.

The following off-site features were observed immediately surrounding the site:

- A large drainage retardation basin with a surrounding walking track was located to the west and south of the site. To the north of the basin and immediately northwest of the site three raised mounds orientated in an east / west direction and a drain were observed. Water in the drain appears to discharge into a former irrigation channel to the north.
- Between the southern portion of the site and drainage retardation basin, two small dams / ponds were located. The on-site north / south irrigation channel discharged into one of the dams.
- Major earthworks were occurring along the eastern boundary of the site with construction of residential dwellings and roads.

6.2 Conclusions for Site Inspection

Based on the site inspection and historical information, the site is considered likely to have been used for agriculture (grazing and / or cropping) land uses and the following potential contamination sources and associated contaminants are considered likely to have related to the site:

- Broad application of fertilisers: Nitrate and nitrite.
- Broad application of herbicides and possible insecticides: Herbicides, organochlorine pesticides (OCP) and organophosphorus pesticides (OPP), that also have the potential to include perfluoroalkyl and polyfluoroalkyl substances (PFAS).

7 Preliminary Geotechnical Hazard Assessment

7.1 Basis of Assessment

To undertake this preliminary geotechnical hazard desktop assessment, WSP has referred to the following publicly available resources:

- Geological Survey of Victoria 1:100,000 scale Shepparton map sheet, Department of Industry, Technology and Resources.
- Department of Environment and Primary Industries, Visualising Victoria's Groundwater website and bore database at www.vvg.org.au.
- Australian Standard AS 2870-2011, "Residential slabs and footings" and Australian Standard AS 1170.4-2007, "Earthquake actions in Australia".
- Department of Environment Land, Water and Planning's (DEWLP) Mapshare Victoria database at mapshare.vic.gov.au.
- Nearmap at nearmap.com and Google Maps at google.com.au/maps.

7.2 Geotechnical Desktop Assessment

The site environmental setting is discussed in detail in **Section 4**, including geology, hydrology and hydrogeology, however the following summary information pertinent to ground conditions and geotechnical hazards is highlighted:

- **Topography and surface conditions:** Aerial imagery and the site inspection indicated the following likely surface conditions:
  - The site relatively flat and appears to have been formerly used for agricultural purposes.
  - Two surface water drainage channels / ditches are present onsite and in surrounding areas.
- **Geology and subsurface conditions:** Geological mapping and borehole information indicates the following:
  - The site is underlain by Quaternary age Shepparton Formation which comprises clay, sand and gravel, however more specifically ground conditions are likely to comprise clay, silty clay, and sand.
- **Anticipated groundwater conditions:** Visualising Victoria's Groundwater website indicates the following:
  - Depth to the groundwater across the site is considered to be very shallow across the site (less than 5 m).
- **Geotechnical hazards:** Based on available information, the following is concluded regarding geotechnical hazards:
  - No indications or evidence related to major existing geotechnical hazards was identified, however the recommendations provided below should be considered during future development planning.

7.3 Preliminary Geotechnical Recommendations

7.3.1 Indicative Site Classification

In accordance with AS 2870-2011 “Residential slabs and footings”, the site is located in the Victorian Climatic Zone 4 that has a design suction change depth of 4 m. Based on the anticipated ground conditions and with reference to Table D1 of AS 2870-2011, an indicative site classification of Class M-D to H2-D may be adopted for preliminary purposes with potential characteristic surface movements of between 20 mm to 75 mm. Higher characteristic surface movements may be encountered in localised areas across the site. Dwelling-specific site classifications are recommended at a later stage of the project.

7.3.2 Indicative Site Sub-soil Class

An earthquake site sub-soil class has been assessed based on the requirements of AS1170.4-2007 “Part 4: Earthquake actions in Australia” and expected subsurface conditions encountered at the site. An indicative site sub-soil class of Class De – deep or soft soil site may be adopted for preliminary purposes.

7.3.3 Shallow Footings

For preliminary purposes, it is recommended that strip and pad footings founded into the natural stiff or better clays, or medium dense or better sands of the Shepparton Formation may be proportioned for the maximum allowable bearing pressures of 100 kPa.

7.3.4 Excavation Conditions

Excavation of site soils should be readily achievable using conventional mechanical equipment such as tracked excavators and backhoes.

7.3.5 Pavement Subgrade

Pavement subgrades may be formed in natural site soils. Subgrades formed in Shepparton Formation clay may have high shrink / swell potential and may need to be covered by a capping layer of imported low permeability and low reactive material.

8 Development Constraints Assessment

8.1 General Environmental Development Constraints

Based on a review of the site environmental setting and the preliminary geotechnical hazard assessment, WSP has identified the following general environmental development constraints that may apply and could affect redevelopment of the site for a residential end use:

- **Shallow groundwater:** Depth to groundwater across the site is expected to be shallow (less than 5 m). *Shallow groundwater may generally exacerbate localised flooding and impact deeper excavations for building foundations or underground utilities e.g. stormwater drainage or sewerage systems.*
- **Drainage and flooding:** The majority of the site is located within a 1 in 100-year flood extent; it is understood that Council has engaged a consultant to prepare an updated model of flood behaviour for MWGC. *Flooding may limit the developable areas of the site or require sustainable urban drainage systems to reduce flooding potential.*
- **Ecology:** The majority of the site contains endangered ecosystems (Plains Woodland and Forests). *Ecosystems may constrain or prevent development where protected species exist that require conservation or possibly relocation or ecological offsetting.*

8.2 Contamination Development Constraints

Based on a review of the site environmental setting, site history and extrapolation of the findings of the site walkover inspection undertaken, WSP has identified a medium risk of significant contamination being present, as associated with historical agricultural land use, noting that it could not be confirmed whether this land was used purely for grazing purposes. Given the presence of former irrigation channels onsite, it is considered possible that agricultural cropping was previously undertaken at the site.

Cropping activity has the potential for broad scale application of fertilisers and / or herbicides across the site i.e. across surface soils. Contamination impacts from historical grazing or cropping activities are considered likely to have since dispersed and degraded i.e. within surface water runoff and by climatic factors such as sunlight and heat. However, there is the potential for more persistent chemicals (associated with herbicide application) to be present.

Potential contamination at the site could constrain redevelopment of the site by affecting suitability for a residential end use, or through requiring further environmental assessments or remediation. Further environmental assessments e.g. a PRSA or limited soil sampling exercise are possibly required for this medium-risk site. However, site remediation is less likely to be needed.

8.3 Potentially Unidentified Contamination

As noted previously in **Section 6**, a site inspection was undertaken. Although considered to be associated with a very low probability of being present at the site, contaminative agricultural activities such as slurry pits, slurry lagoons or cess pits with animal wastes (excreta), agricultural landfills possibly including animal burial after culling, or livestock treatment areas for external parasites (sheep dips) could plausibly be relevant to the site. While it is noted that during the property inspections, WSP did not observe any evidence for these areas to exist, these potential contamination sources should be considered during future development planning and implementation e.g. as possible unexpected finds during earthworks.

9 Conclusions & Recommendations

9.1 Summary Conclusions

WSP was engaged by Council to conduct a soil contamination assessment in the form of a PSI, in relation to the subject site, located within Greater Shepparton. The site consists of a single property owned by Council, but forms part of a large 'corridor' parcel of land, referred to as MWGC, which is located approximately 1.7 km west from the centre of the city of Mooroopna. The site is intended for future redevelopment for a predominately medium-density residential end use.

9.1.1 Environmental Setting

The site is generally underlain by Quaternary aged Shepparton Formation. A review of publicly available borehole logs in the area shows that the site is more specifically underlain by red-yellow-brown clay, with interbedded sand and clay from depths varying between 5 and 15 m. There is a low potential for ASS to exist across of the site.

The site does not contain any active surface water bodies, however former small distributary irrigation channels appear to exist onsite. A drainage retardation basin runs along the southern-western boundary of the site where the onsite north / south orientated irrigation channel discharges via underground piping. The Goulburn River is present approximately 2.2 km to the east and northeast along with Gemmill Swamp, located 2 km to the northeast of the site. Surface water runoff at the site is expected to flow to the south into the drainage retardation basin. The majority of the site is within the 1 in 100-year flood extent.

Based on registered bores, depth to groundwater across the zone is expected to be around 10 m below ground level, however VVG suggests that depth to groundwater may be less than 5 m i.e. very shallow groundwater across the site. Based on the expected depth to groundwater and topography across the site, regional groundwater flow is anticipated to flow north to northeast towards the Goulburn River and Gemmill Swamp.

The site contains an endangered ecosystem (Plains Woodland or Forests) across the majority of the site.

9.1.2 Site History Review

The review of all available historical information sources in this section (above) indicated that the majority of the site appears to have been occupied by agricultural land uses (inferred grazing or cropping) and / or unoccupied land for the entire recorded history of the site. In recent years, a small portion of the site along the eastern boundary has undergone earthworks associated with the residential development occurring adjacent to the east of the site. Contamination impacts from historical grazing or cropping activities are considered likely to have since dispersed and degraded. However, there is the potential for more persistent chemicals (associated with herbicides) such as PFAS to be present. There were no historical business directory listings recorded at the site, and no listings of potentially contaminative activities within 150 m of the site.

9.1.3 Site Inspection

The site inspection confirmed that the site was generally occupied by agricultural land uses (grazing or cropping land) with former irrigation channels located across the site. Minor earthworks had occurred on the site associated with the adjoining residential development to the east. Based on the land use identified during the site inspection, it is considered likely that potential sources of contamination of the site may be expected to comprise the application of herbicides, fertilisers and possibly insecticides.

9.1.4 Geotechnical Assessment

Based on available information, no indications or evidence related to major existing geotechnical hazards was identified, however the recommendations provided below should be considered during future development planning:

- **Indicative Site Classification:** An indicative site classification of Class M-D to H2-D may be adopted for preliminary purposes with potential characteristic surface movements of between 20 mm to 75 mm.
- **Indicative Site Sub-soil Class:** An indicative site sub-soil class of Class De – deep or soft soil site may be adopted for preliminary purposes.
- **Shallow Footings:** Strip and pad footings founded into the natural stiff or better clays, or medium dense or better sands of the Shepparton Formation may be proportioned for the maximum allowable bearing pressures of 100 kPa.
- **Excavation Conditions**: Excavation of site soils should be readily achievable using conventional mechanical equipment such as tracked excavators and backhoes.
- **Pavement Subgrade:** Pavement subgrades may be formed in natural site soils. Subgrades formed in Shepparton Formation clay may have high shrink / swell potential and may need to be covered by a capping layer.

9.2 Potential Development Constraints

WSP has identified the following sitewide development constraints that may apply to the site, and should be considered further within future development plans:

- **Shallow groundwater:** Shallow groundwater may generally exacerbate localised flooding and impact deeper excavations for building foundations or underground utilities e.g. stormwater drainage or sewerage systems.
- **Drainage and flooding:** Flooding may limit the developable areas of the site or require sustainable urban drainage systems to reduce flooding potential.
- **Ecology:** Ecosystems may constrain or prevent development where protected species exist that require conservation or possibly relocation or ecological offsetting.

WSP has identified the following contamination development constraint based on observed land uses and activities, and where potential contamination could constrain redevelopment of the site by affecting suitability for a residential end use, or through requiring remediation:

- **High risk** land uses, which have a high risk of significant contamination being present, in a situation more likely relevant to point sources within the site; potential point source contamination is highly likely to render the site unsuitable for a residential end use; further environmental assessments e.g. an environmental audit is very likely to be required; site remediation may also be needed:

  High risk land uses and activities were not identified at the site, however potential contamination sources such as slurry pits, slurry lagoons or cess pits, agricultural landfills or sheep dips should be considered during future development planning and implementation e.g. as unexpected finds during earthworks.

- **Medium risk** land uses, which have a medium risk of significant contamination being present, in a situation more likely relevant to localised diffuse sources across the site; potential diffuse source contamination may plausibly render the site unsuitable for a residential end use; further environmental assessments e.g. a PRSA or sampling are likely to be required; site remediation is less likely to be needed:

  Medium risk land uses at the site were identified to include historical and recent agricultural activities (more likely associated with cropping) based on the former irrigation channel located at the site and the site forming part of a larger agricultural property.

- **Low risk** land uses, which have a low risk of significant contamination being present, within a situation more likely relevant to regional dispersed sources across the site; potential dispersed source contamination may implausibly render the site unsuitable for a residential end use; further environmental assessments other than a PSI are unlikely to be required; site remediation is unlikely to be needed:

  Low risk land uses and activities were not identified at the site.

- **Very low risk** land uses, which have a negligible risk of significant contamination being present, within a situation more likely relevant to absence of sources across the site; potential presence of any contamination is highly unlikely to render the site unsuitable for a residential end use; further environmental assessments other than Planning Authority consideration are very unlikely to be required; site remediation is very unlikely needed:

  Very low risk land uses and activities were not identified at the site.

While noting that only an EPA-accredited Environmental Auditor can definitively determine the suitability of a site for a proposed future land use, it is generally considered that the site will likely be suitable for a residential end use, noting that further consideration will be potentially be required for medium risk land use. Further discussion concerning planning considerations is provided in **Section 9.4**, while discussion of possibly further assessment work is provided in **Section 9.5**.

9.3 Contaminated Land Duties

9.3.1 Duty to Notify Contamination

Given the conclusions of the PSI summarised above, possible triggers for the Duty to Notify (DtN) confirmed prescribed soil contamination have been considered in relation to the site. To support making this assessment, WSP has referred to EPA Publication 2008 *Notifiable contamination guideline - Duty to notify of contaminated land* (June 2021, draft version). The DtN relates principally to the duty of persons in management or control of land to notify EPA as soon as practicable, if contamination at their site may pose a significant risk to human health or the environment. However, if a trigger of DtN was identified through the course of this PSI or subsequent environmental assessment work, Council would be required to inform the applicable property owner or operator.

As stated with Regulations 8 through 13 of the EP Act, there are a range of environmental media, contamination scenarios and manifestations that may equate to prescribed notifiable contamination. The applicability of the circumstances and conditions required for notification in relation to the findings of the PSI are summarised in **Table 9.1**:

Table 9.1 Possible Duty to Notify assessment

REGULATION	DTN TRIGGER SCENARIOS	POTENTIAL APPLICABILITY TO THE SITE
REGULATION 8: Soil Contamination	**Onsite or offsite (actual or foreseeable):** Is the presence of a contaminant in or on soil, which is prescribed notifiable contamination, likely to be applicable to the site or land adjacent to the site?	— **Low to moderate potential**: Potential for soil contamination associated with cropping, but from diffuse sources and likely at low concentrations given the relative intensity of these activities.
REGULATION 9: Asbestos in Soil	**Friable asbestos:** Is the presence of friable asbestos, which is prescribed notifiable contamination, likely to be applicable to the site?	— **Low potential:** Friable asbestos is unlikely to be present in soil given no residential infrastructure construction has occurred across the site. No obvious areas of buried waste or use of imported fill were observed.
REGULATION 10 (1): Groundwater Contamination	**Groundwater entry:** Is the entry or likely entry of a contaminant into groundwater, which is prescribed notifiable contamination, likely to be applicable to the site?	— **Low potential:** Groundwater contamination likely limited to diffuse regional contamination from agricultural land uses e.g. cropping.

REGULATION	DTN TRIGGER SCENARIOS	POTENTIAL APPLICABILITY TO THE SITE
REGULATION 10 (2): Surface Water Contamination	**Surface water entry:** Is the entry or likely entry of a contaminant into surface water, which is prescribed notifiable contamination, likely to be applicable to the site?	— **Low potential:** Surface water contamination likely limited to rainfall runoff from cropping areas and pastures into the drainage channels / ditches network and low concentrations of herbicides and fertilisers e.g. nitrate and nitrites.
REGULATION 10 (3): Non-aqueous phase liquids (NAPL)	**NAPL:** Is the presence of any non-aqueous phase liquid, which is prescribed notifiable contamination, likely to be applicable to the site?	— **Low potential:** Due to the absence of bulk fuel and oil storage e.g. at farm yards (diesel) or residential dwellings (heating oil) onsite and particularly the apparent absence of underground storage tanks (USTs).
REGULATION 11: Vapour Inhalation Pathway	**Soil vapour:** Is the presence of soil vapour, which is prescribed notifiable contamination, likely to be applicable to the site?	— **Low potential:** Unlikely groundwater beneath the site is impacted from on-site sources i.e. leaks of fuel from bulk storage that may represent a potential source of soil vapour.
REGULATION 12: Onsite Retention of contaminated Soil	**Soil repositories:** Is the on-site retention of soil (other than fill material), which is prescribed notifiable contamination, likely to be applicable to the site?	— **Not applicable:** No on-site retention of soil (contaminated soil repositories) has been identified as present at the site. Topography of the site appears to be reasonably natural.
REGULATION 13: Prescribed Exempt Notifiable Contamination	**Exemptions:** Are there any exemptions to prescribed notifiable contamination that are likely to be applicable to the site?	— **Not applicable:** No wastes are stockpiled as part of permitted waste management; no previous regulatory notices or statutory environmental audits apply to site (limited to forest audit).

Based on the assessment provided in **Table 9.1**, it is considered that there is an overall low potential for any trigger of DtN prescribed notifiable contamination, to currently be applicable to the site. While the site was identified as a medium risk land use, contamination is anticipated to be associated with diffuse sources of contamination and relatively low concentrations of contaminants. For example, the broad application of chemicals such as fertilisers, pesticides or herbicides for agricultural purposes, are considered unlikely scenarios for triggering any DtN.

9.3.2 Duty to Manage Contamination

Although a low potential for any trigger of DtN confirmed prescribed notifiable contamination has been identified, it is noted that Council still has ongoing obligations under the new DtM contamination risk. The DtM requires persons in management or control of land to minimise the risks of harm to human health and the environment from potential or confirmed contamination. Noting that this PSI has been commissioned and completed, it is considered that Council has already in part helped to meet obligations under the DtM. It would however be prudent for Council to further satisfy themselves that they continue to meet their obligations under the DtM, per the guidance set out in *EPA Publication 1977 - Assessing and controlling contaminated land risks: A guide to meeting the duty to manage for those in management or control of land (June 2021, draft version).*

9.4 Planning Considerations

As discussed in detail in **Section 2.2**, PPN30 was published in July 2021 and provides updated guidance regarding the role of the planning system in helping to assess the potential for contamination at a site, and advice concerning the level of environmental assessment work that may be required. A planning or responsible authority must ensure that the effects of the environment on a planning proposal are considered, and that potentially contaminated land is suitable for its proposed use.

Given the conclusions of the PSI summarised above, in the context of PPN30, it is recommended that a PRSA be undertaken to determine the need for audit. Contamination impacts from historical grazing or cropping activities are considered likely to have since dispersed and degraded. However, there is the potential for more persistent chemicals (associated with herbicide application) to be present Council should however undertake consultation with an EPA-accredited environmental auditor to assess and define the most appropriate planning pathway for the site, with respect to potential contamination.

9.5 Further Assessment Work

Based on the planning considerations provided in **Section 9.2**, it is anticipated that further assessment in the form of a PRSA to determine need for audit may be required. It is currently assumed that the PRSA may be commissioned by future property developers or Council as required by the planning authority, and as the site becomes available to be investigated or possibly remediated.

To support the completion of the PRSA (if required), and as a conservative measure, it may be prudent to undertake some limited soil investigations (sampling) at the site. This could take the form of the collection and analysis of surface / shallow soil samples on a wide grid basis across the site e.g. areas of expected fertiliser or herbicide application. This sampling could inform the need for any further soil, groundwater, surface water, sediment or soil vapour investigations, while also negating the need for any PRSA to conclude with a recommendation for an environmental audit. The sampling could also indicate whether any remediation might be required to render the site suitable for a residential end use, and that the site does not represent an unacceptable risk to future residential occupants and those of neighbouring residential properties.

With respect to the potential future requirement for remediation at the site, if soils at the site are to be reused, further assessment would be required to demonstrate they are suitable for future residential areas e.g. as topsoil in gardens or within communal landscaping.

10 Limitations

This Report is provided by WSP Australia Pty Limited (WSP) for Greater Shepparton City Council (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 4 February 2022 and Client's Purchase Order #77421 and its Terms and Conditions dated 21 March 2022 (Agreement).

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Appendix A

Figure

294 McLennan Street, Mooroopna

Figure 1
Site Locality

Legend

- Study area
- Cadastre parcel

0 40 80
Meters

Coordinate system: GDA2020 MGA Zone 55

Scale ratio correct when printed at A3

1:2,000 Date: 9/06/2022

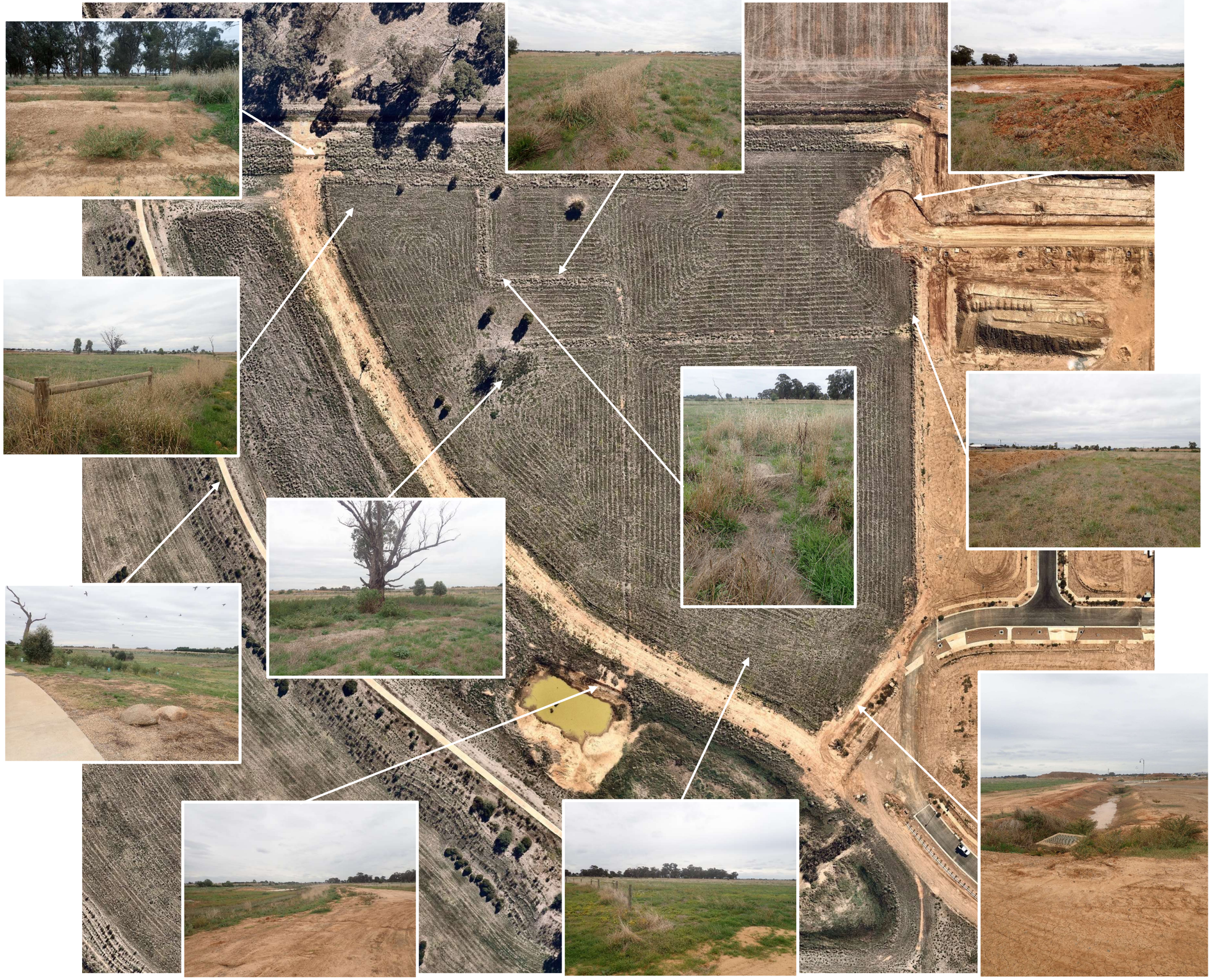
GDA 2020

ata sources: DELWP, Geoscience Australia, Nearmap 2022

C:\Users\DatoV\WSP O365\AU-WKG - Geospatial - AIS - Projects\PS131031_GSCC_294_McLennan\Mxd\PS131031_F001_SiteLocality_r1v1.mxd

Appendix B

Photographic Record of Site Inspection



294 McLennan Street, Mooroopna
Preliminary Site Investigation

Site Inspection Photographic Record

Property

Part of 294 McLennan Street, Mooroopna

Site Inspection Date

27 April 2022

Appendix C

Lotsearch Enviro Report

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 28 Mar 2022 16:34:28

Reference: LS030561 EP

Address: 294 McLennan Street, Mooroopna, VIC 3629

Dataset Listing

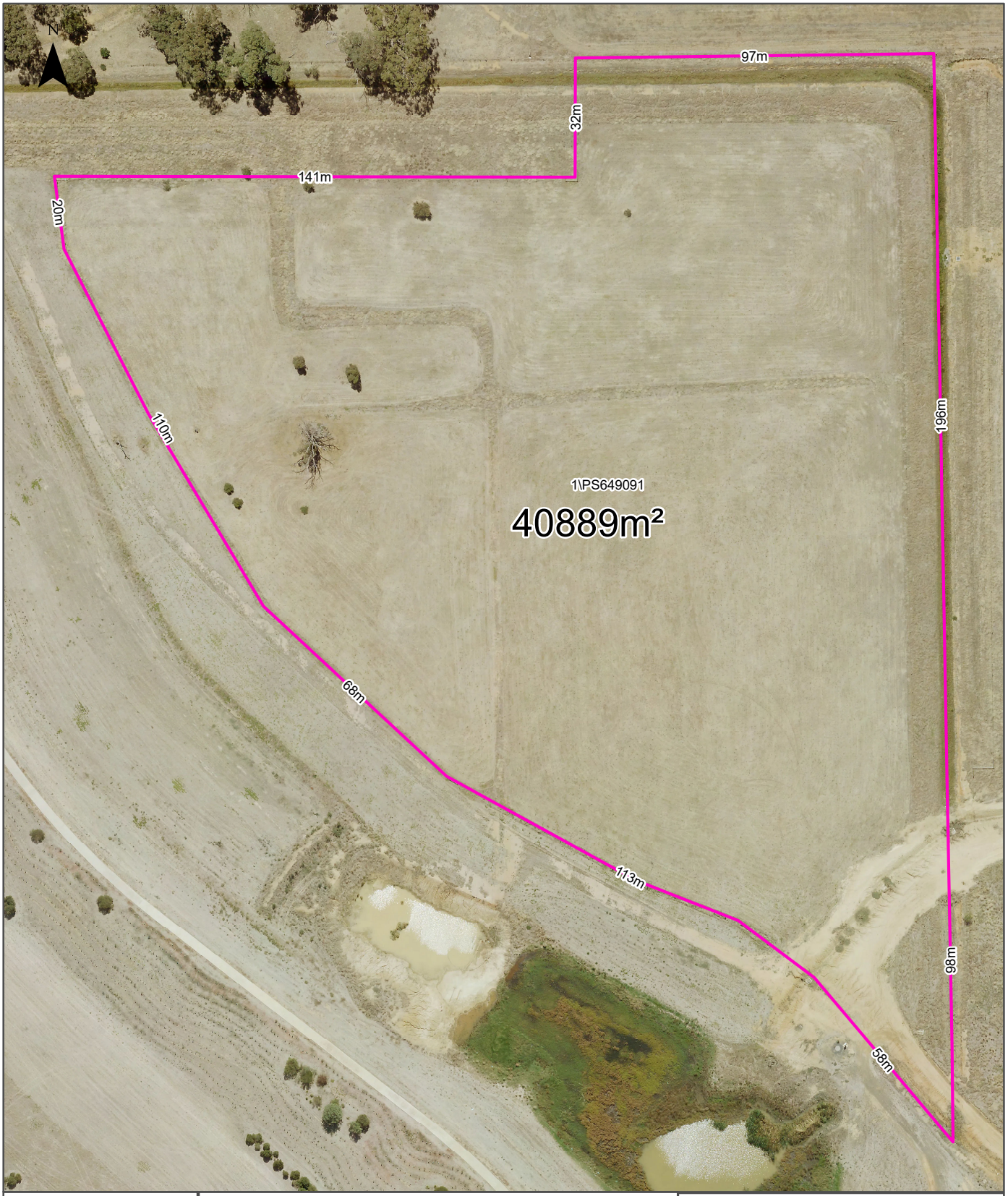
Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Topographic and Cadastre data	State Government Victoria - Department of Environment, Land, Water & Planning	28/01/2022	28/01/2022	Monthly	-	-	-	-
Current EPA Priority Sites	Environment Protection Authority (Vic)	16/03/2022	28/02/2022	Monthly	1000m	0	0	0
Former EPA Priority Sites & other Remedial Notices	Environment Protection Authority (Vic)	04/10/2021	01/09/2021	Monthly	1000m	0	0	0
EPA PFAS Site Investigations	Environment Protection Authority (Vic)	28/09/2021	18/09/2020	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	03/03/2022	03/03/2022	Monthly	2000m	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	03/03/2022	03/03/2022	Monthly	2000m	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	02/03/2022	02/03/2022	Monthly	2000m	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	03/03/2022	03/03/2022	Quarterly	2000m	0	0	0
EPA Environmental Audit Reports	Environment Protection Authority (Vic)	21/03/2022	21/03/2022	Monthly	1000m	0	0	0
EPA Groundwater Zones with Restricted Uses	Environment Protection Authority (Vic)	23/03/2022	23/03/2022	Monthly	1000m	0	0	0
Current EPA Licensed Activities	Environment Protection Authority (Vic)	21/03/2022	22/07/2021	Monthly	1000m	0	0	0
Former EPA Licensed Activities	Environment Protection Authority (Vic)	21/03/2022	26/11/2021	Monthly	1000m	0	0	0
EPA Works Approvals	Environment Protection Authority (Vic)	28/03/2022	28/03/2022	Monthly	1000m	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/05/2021	07/03/2017	Annually	1000m	0	0	0
Statewide Waste and Resource Recovery Infrastructure Plan Facilities	State Government Victoria - Department of Sustainability	27/11/2014	31/12/2012	None planned	1000m	0	0	0
EPA Prescribed Industrial Waste	Environment Protection Authority (Vic)	12/08/2020	12/08/2020	Quarterly	1000m	0	0	0
EPA Victorian Landfill Register	Environment Protection Authority (Vic)	31/01/2022	25/08/2020	Quarterly	1000m	0	0	0
Former Gasworks	Various historical sources collated by Lotsearch	15/08/2017	15/08/2017	Not required	1000m	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	15/02/2021	15/03/2012	Annually	1000m	0	0	0
Historical Business Directories (Premise & Intersection Matches)	Hardie Grant; Sands & McDougall, State Library Victoria			Not required	150m	0	0	0
Historical Business Directories (Road & Area Matches)	Hardie Grant; Sands & McDougall, State Library Victoria			Not required	150m	-	0	0
Historical Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant; Sands & McDougall, State Library Victoria			Not required	500m	0	0	0
Historical Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant; Sands & McDougall, State Library Victoria			Not required	500m	-	0	4
Features of Interest	State Government Victoria - Department of Environment, Land, Water & Planning	29/09/2021	29/09/2021	Quarterly	1000m	0	1	17
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000m	1	1	2
Groundwater Salinity	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	29/08/2012	Unknown	0m	1	-	-
Depth to Watertable	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	29/08/2012	Unknown	0m	1	-	-
Surface Elevation	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	23/09/2013	Unknown	0m	1	-	-

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features On-site	No. Features within 100m	No. Features within Buffer
Basement Elevation	State Government Victoria - Department of Environment, Land, Water & Planning	14/08/2015	23/09/2013	Unknown	0m	1	-	-
Groundwater Boreholes WMIS	State Government Victoria - Department of Environment, Land, Water & Planning	23/08/2021	23/08/2021	Quarterly	2000m	0	0	114
Groundwater Boreholes Earth Resources Database	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	20/05/2021	17/02/2010	Annually	2000m	0	0	52
Groundwater Boreholes Fed Uni	Federation University Australia	21/12/2017	07/01/2014	As required	2000m	0	0	0
Historical Mining Activity - Shafts	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	11/05/2021	11/05/2021	Annually	1000m	0	0	0
Geological Units 1:250,000	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000m	1	1	1
Geological Structures 1:250,000	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000m	0	0	0
Shear zones 250k	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	13/01/2015	24/06/2014	Unknown	1000m	0	0	0
Atlas of Australian Soils	ABARES	19/05/2017	17/02/2011	As required	1000m	1	1	1
Victorian Soil Type Mapping	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	24/08/2017	21/03/2016	Unknown	1000m	2	2	2
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000m	1	1	1
Coastal Acid Sulfate Soils	State Government Victoria - Department of Economic Development, Jobs, Transport and Resources	28/03/2017	30/03/2011	None planned	1000m	0	0	0
Planning Scheme Zones	State Government Victoria - Department of Environment, Land, Water & Planning	10/02/2022	02/02/2022	Monthly	1000m	1	4	24
Planning Scheme Overlay	State Government Victoria - Department of Environment, Land, Water & Planning	10/02/2022	02/02/2022	Monthly	1000m	4	7	31
Commonwealth Heritage List	Australian Government Department of Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
National Heritage List	Australian Government Department of Agriculture, Water and the Environment	18/05/2021	20/11/2019	Annually	1000m	0	0	0
Victorian Heritage Register	State Government Victoria - Department of Environment, Land, Water & Planning	05/08/2021	05/08/2021	Quarterly	1000m	0	0	0
Cultural Heritage Sensitivity	State Government Victoria - Department of Premier and Cabinet	29/09/2021	29/09/2021	Quarterly	1000m	0	0	1
Bushfire Prone Area	State Government Victoria - Department of Transport, Planning and Local Infrastructure	05/08/2021	06/07/2021	Quarterly	1000m	1	1	1
Fire History	State Government Victoria - Department of Environment, Land, Water & Planning	15/11/2021	15/11/2021	Quarterly	1000m	0	0	0
Flood - 1 in 100 Year Modelled Flood Extent	State Government Victoria - Department of Environment, Land, Water & Planning	11/08/2021	05/02/2018	Quarterly	1000m	1	1	1
Victorian Coastal Inundation Sea Level Rise	State Government Victoria - Department of Environment, Land, Water & Planning	10/04/2018	24/10/2017	Unknown	1000m	0	0	0
Native Vegetation (Modelled 2005 Ecological Vegetation Classes)	State Government Victoria - Department of Environment, Land, Water & Planning	13/01/2015	31/12/2005	None planned	1000m	1	1	2
Ramsar Wetland Areas in Victoria	State Government Victoria - Department of Environment, Land, Water & Planning	28/03/2022	13/03/2019	Annually	1000m	0	0	0
Groundwater Dependent Ecosystems Atlas	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	1	1	2
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000m	1	2	7

Site Diagram

294 McLennan Street, Mooroopna, VIC 3629



Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 40889m²

Total Perimeter: 934m

Scale: 0 25 50 Meters

Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Disclaimers:

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

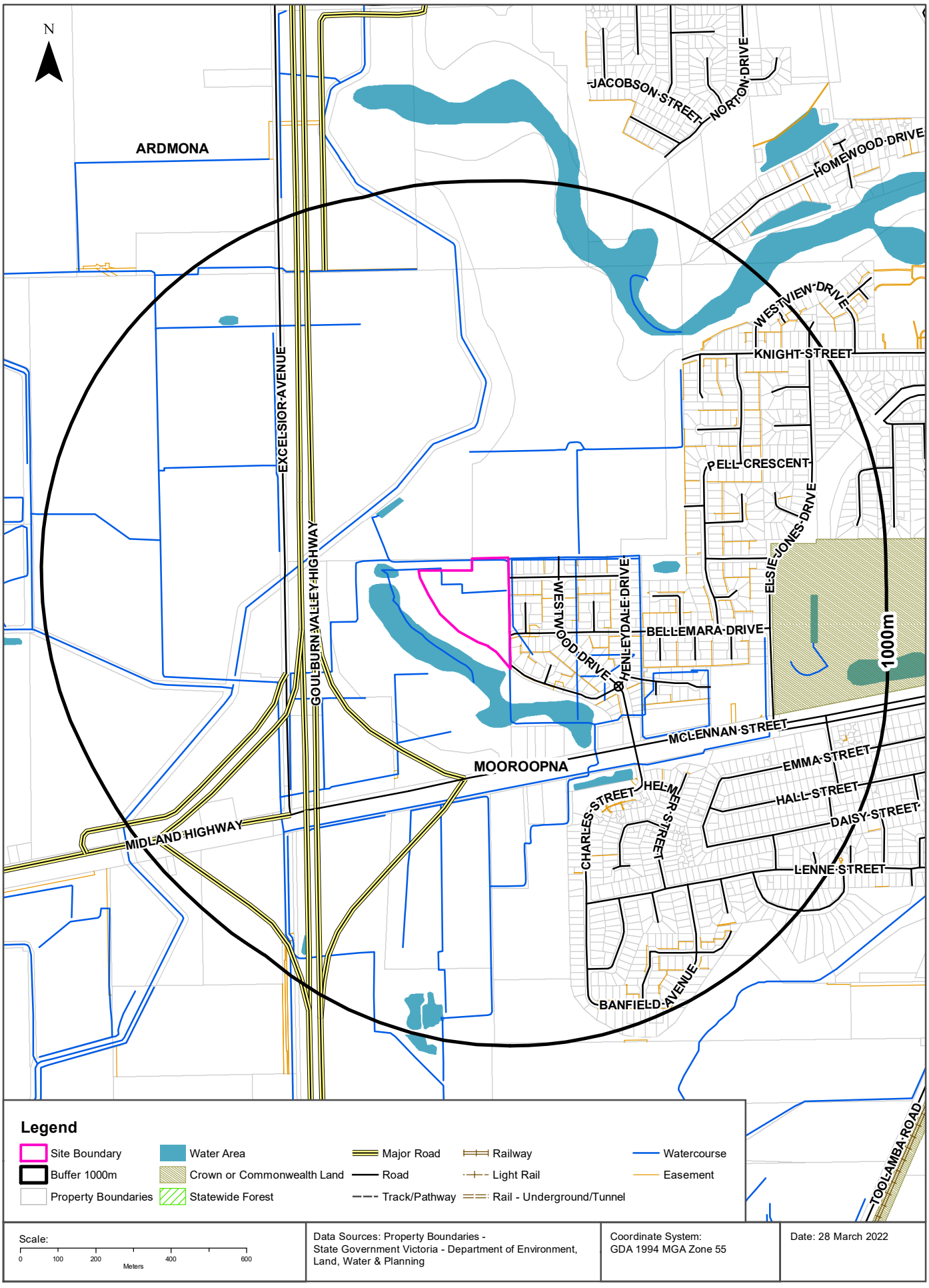
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System:
GDA 1994 MGA Zone 55

Date: 28 March 2022

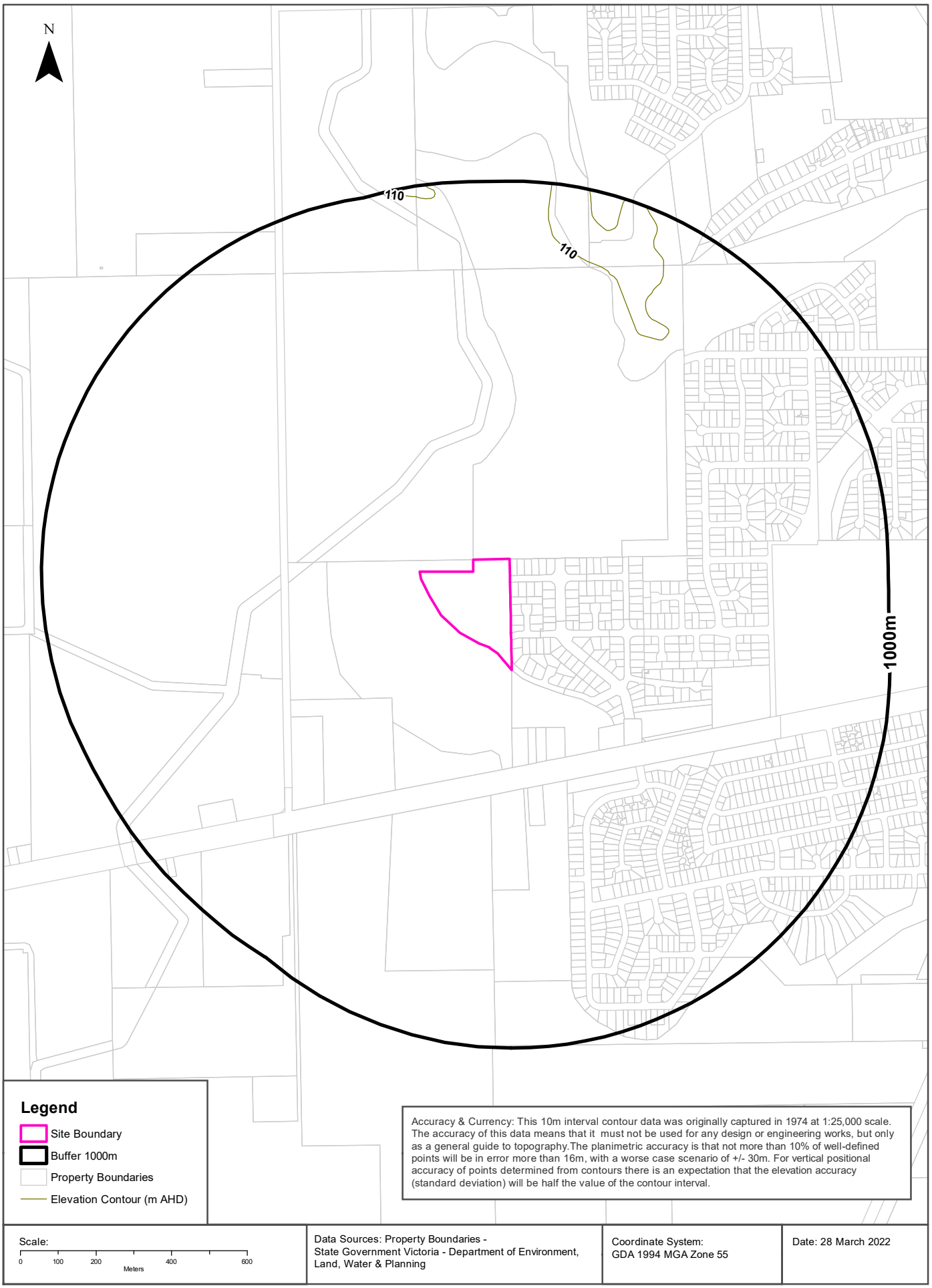
Topographic Data

294 McLennan Street, Mooroopna, VIC 3629



Elevation Contours (m AHD)

294 McLennan Street, Mooroopna, VIC 3629



EPA Priority Sites & Pollution Notices

294 McLennan Street, Mooroopna, VIC 3629

Current EPA Priority Sites Register

Sites on the current EPA priority sites register that exist within the dataset buffer:

Notice No	Address	Suburb	Issue	Loc Conf	Dist (m)	Direction
N/A	No records in buffer					

Priority Sites Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Former EPA Priority Sites & Other Pollution Notices

Sites within the dataset buffer that have been issued a Pollution Notice:
Note. Due to pollution notices being revoked and removed from published lists this is not an exhaustive list of all past pollution notices.

Notice No	Notice Type	Company	Address	Suburb	Status	Issue	Date Issued	Loc Conf	Dist	Dir
N/A	No records in buffer									

Pollution Notice Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

PFAS Investigation & Management Programs

294 McLennan Street, Mooroopna, VIC 3629

EPA PFAS Site Investigations

Sites being investigated by the EPA for PFAS contamination within the dataset buffer:

Map ID	Site Name	Address	Location Confidence	Distance	Direction
N/A	No records in buffer				

EPA PFAS Site Investigations Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Defence PFAS Investigation & Management Program Investigation Sites

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

Map ID	Base Name	Address	Location Confidence	Distance	Direction
N/A	No records in buffer				

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

Defence PFAS Investigation & Management Program Management Sites

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

Map ID	Base Name	Address	Location Confidence	Distance	Direction
N/A	No records in buffer				

Defence PFAS Investigation & 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	Location Confidence	Distance	Direction
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

294 McLennan Street, Mooroopna, VIC 3629

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 Records

294 McLennan Street, Mooroopna, VIC 3629

EPA Environmental Audits

EPA environmental audit records that exist within the dataset buffer:
Note. Please click on CARMS No. to activate a hyperlink to online documentation. If link does not work, documentation may still be accessible via the EPA Interaction Portal.

CARMS No	Transaction No	Site	Address	Suburb	Date Complete	Audit Category	Loc Conf	Distance	Direction
N/A	No records in buffer								

Environmental Audit Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

EPA Records

294 McLennan Street, Mooroopna, VIC 3629

EPA Groundwater Zones with Restricted Uses

EPA GQRUZ records that exist within the dataset buffer:
Note. Please click on CARMS No. to activate a hyperlink to online documentation.

CARMS No	EPA Id	Site History	Site Address	Restricted Uses	Status	Loc Conf	Distance	Direction
N/A	No records in buffer							

Environmental GQRUZ Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

EPA Activities

294 McLennan Street, Mooroopna, VIC 3629

EPA Licensed Activities

EPA licensed activities that exist within the dataset buffer:

Trans No	Licence No	Licence Type	Organisation	Premise Ref	Premise Address 1	Premise Address 2	Activities	Loc Conf	Dist (m)	Direction
N/A	No records in buffer									

Licensed Activity Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Former EPA Licensed Activities

Former EPA licensed activities that exist within the dataset buffer:

Licence No	Organisation	Premise Address	Suburb	Activities	Loc Conf	Dist (m)	Direction
N/A	No records in buffer						

Former Licensed Activity Data Custodian: State Government Victoria - Environmental Protection Authority (EPA)

EPA Works Approvals

EPA works approvals that exist within the dataset buffer:

Transaction No	Status	Approval No	Organisation	Premise Address	Suburb	Scheduled Categories	Loc Conf	Dist (m)	Direction
N/A	No records in buffer								

Works Approvals Data Custodian: State Government Victoria - Environment Protection Authority (EPA)

Waste Management Facilities & Landfills

294 McLennan Street, Mooroopna, VIC 3629

National Waste Management Site Database

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

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

Waste Management Facilities Data Source: Australian Government Geoscience Australia

Statewide Waste and Resource Recovery Infrastructure Plan Facilities

Statewide Waste and Resource Recovery Infrastructure Plan Facilities within the dataset buffer:

Map Id	Owner	Site Name	Address	Suburb	Category	Sub Category	Loc Conf	Distance	Direction
N/A	No records in buffer								

SWRRIPF Data Source: State Government Victoria - Department of Sustainability

EPA Prescribed Industrial Waste

EPA Prescribed Industrial Waste treaters, disposers and permitted transporters within the dataset buffer:

Map Id	Company Name	Address	Suburb	Treatment /Disposal	Transport	Accredited Agent	EPA List Status	Loc Conf	Dist (m)	Dir
N/A	No records in buffer									

Prescribed Industrial Waste Data Source: State Government Victoria - Environment Protection Authority (EPA)

Waste Management Facilities & Landfills

294 McLennan Street, Mooroopna, VIC 3629

EPA Victorian Landfill Register

EPA Victorian Landfill Register sites within the dataset buffer:

Landfill Register No.	Site	Address	Operating Status	Est. Year Of Closure	Waste type	Loc Conf	Dist (m)	Direction
N/A	No records in buffer							

EPA Victorian Landfill Register Data Source: State Government Victoria - Environment Protection Authority (EPA)

Former Gasworks and Liquid Fuel Facilities

294 McLennan Street, Mooroopna, VIC 3629

Former Gasworks

Former Gasworks identified from various historical sources within the dataset buffer:
Note - As this is a dataset collated from various historical sources, it is not an exhaustive list of all former Gasworks

Map Id	Site Name	Date Opened	Year Closed	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Collated from various historical sources

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

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

National Liquid Fuel Facilities Data Source: Geoscience Australia

Historical Business Directories

294 McLennan Street, Mooroopna, VIC 3629

Business Directory Records 1905-1991
Premise or Road Intersection Matches

Universal Business Directory and Sands & McDougall Directory records, from years 1991, 1980, 1970, 1960, 1950, 1945, 1925 & 1905, mapped to a premise or road intersection within the dataset buffer:

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

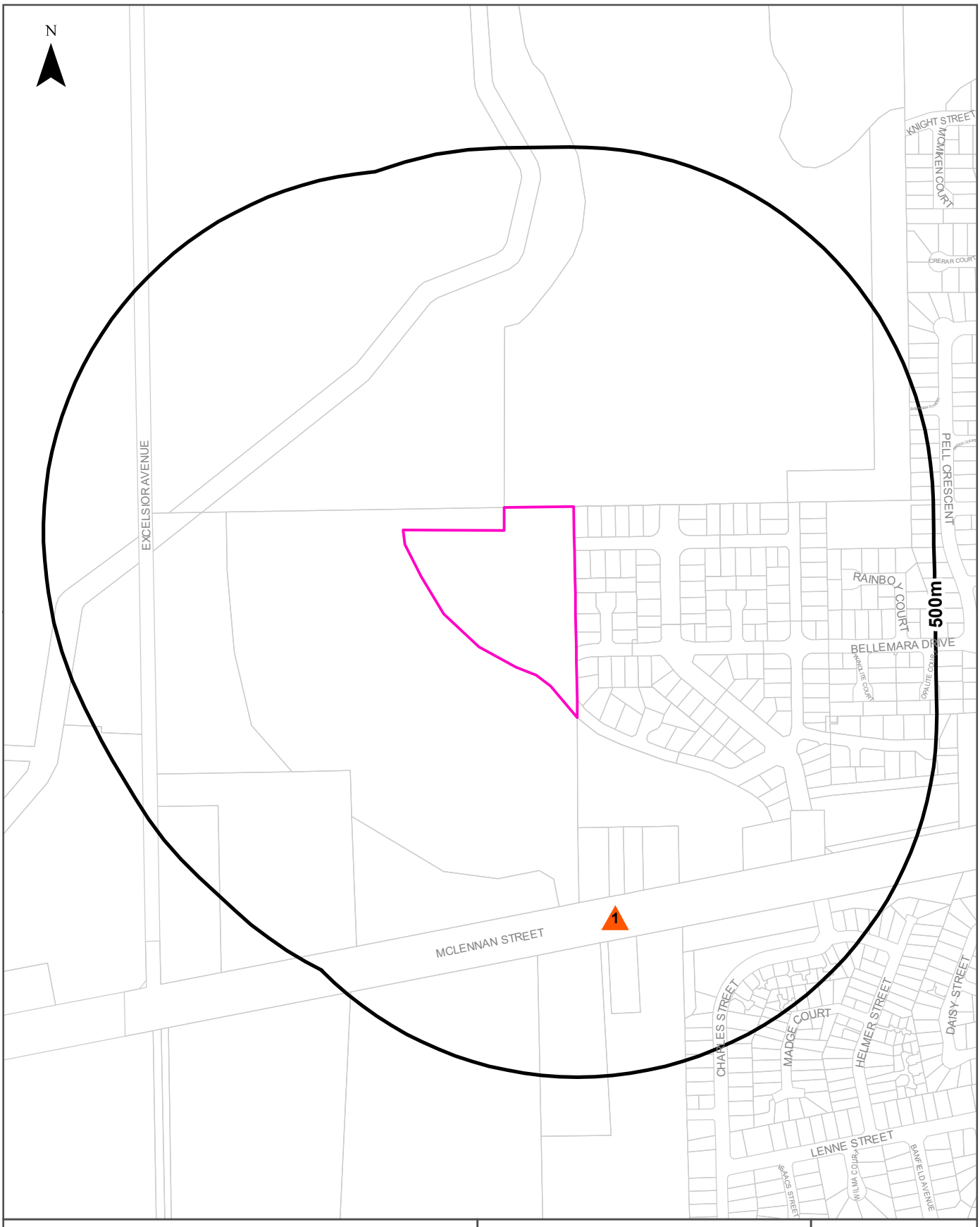
Business Directory Records 1905-1991
Road or Area Matches

Universal Business Directory and Sands & McDougall Directory records, from years 1991, 1980, 1970, 1960, 1950, 1945, 1925 & 1905, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

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

Dry Cleaners, Motor Garages & Service Stations

294 McLennan Street, Mooroopna, VIC 3629



Legend

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

Scale: 0 100 200 300 400 Meters

Coordinate System: GDA 1994 MGA Zone 55

Date: 28 March 2022

Data Sources: Reproduced with permission of UBD and Hardie Grant Media Pty Ltd DD 01/08/2018
Sands & McDougall's Directory - Digitised by State Library Victoria
Property Boundaries © State Government Victoria - Dept. of Environment, Land, Water & Planning 2022

Historical Business Directories

294 McLennan Street, Mooroopna, VIC 3629

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

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

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

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

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories and Sands & McDougall's 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
1	Motor Garages & Service Stations	Stuart Davidson Petroleum Pty. Ltd., Mclennan St. Mooroopna. 3629	137398	1991	Road Match	253m
	MOTOR GARAGES & SERVICE STATIONS	Mooroopna Motors., McLennan St. Mooroopna	65204	1970	Road Match	253m
	DRY CLEANERS & PRESSERS	Regency Dry Cleaners., McLennan St. Mooroopna	65141	1970	Road Match	253m
	MOTOR GARAGES & SERVICE STATIONS	Ryan, John, & Ron Ford's Caltex Service Station., McLennan St. Mooroopna	65205	1970	Road Match	253m

Aerial Imagery 2021

294 McLennan Street, Mooroopna, VIC 3629

Scale:
0 30 60 90 120
Meters

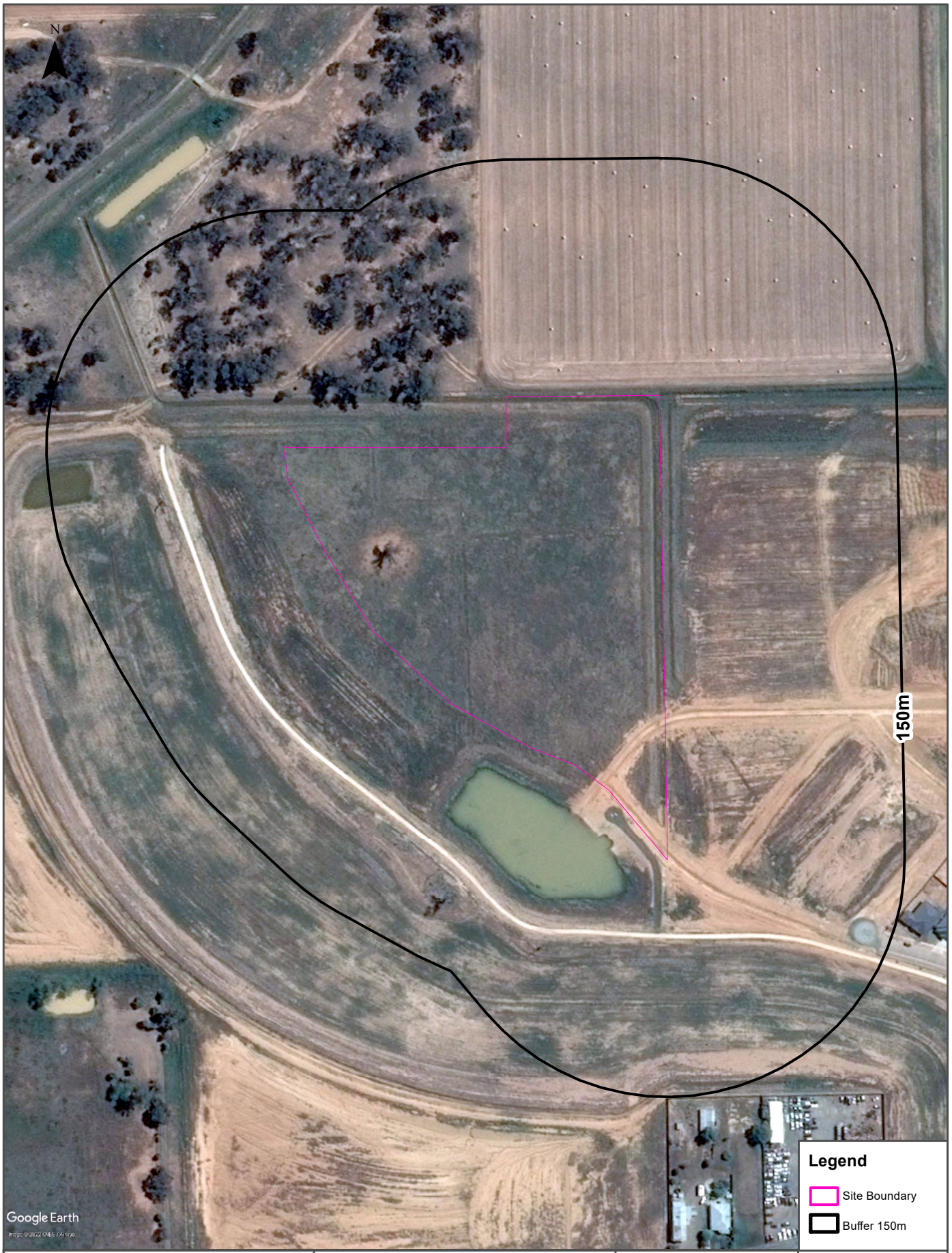
Data Source Aerial Imagery:
© Aerometrex Pty Ltd

Coordinate System:
GDA 1994 MGA Zone 55

Date: 28 March 2022

Aerial Imagery 2015

294 McLennan Street, Mooroopna, VIC 3629



Scale: 0 30 60 90 120 Meters

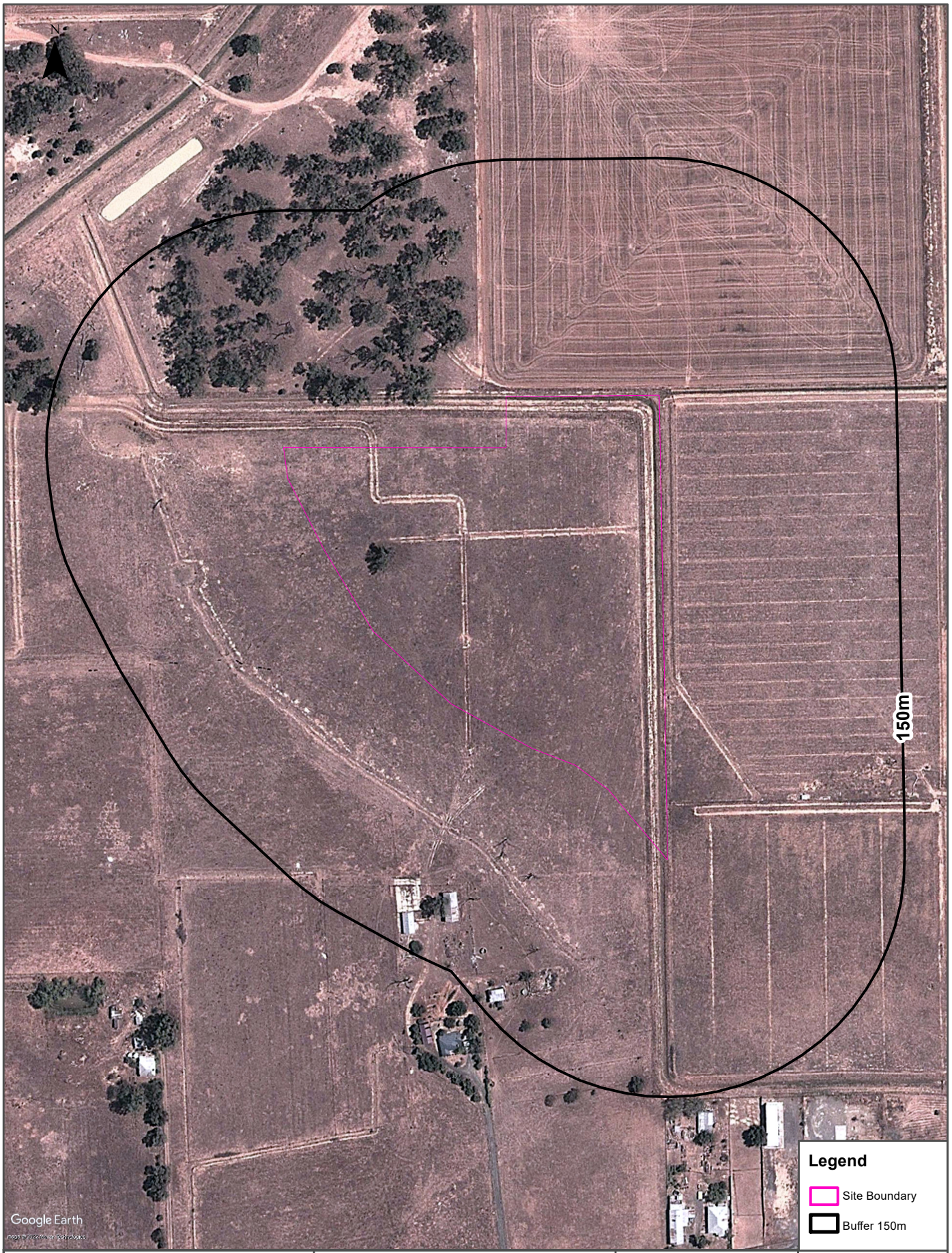
Data Source Aerial Imagery: © 2022 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System: GDA 1994 MGA Zone 55

Date: 26 March 2022

Aerial Imagery 2009

294 McLennan Street, Mooroopna, VIC 3629



Scale:
0 30 60 90 120
Meters

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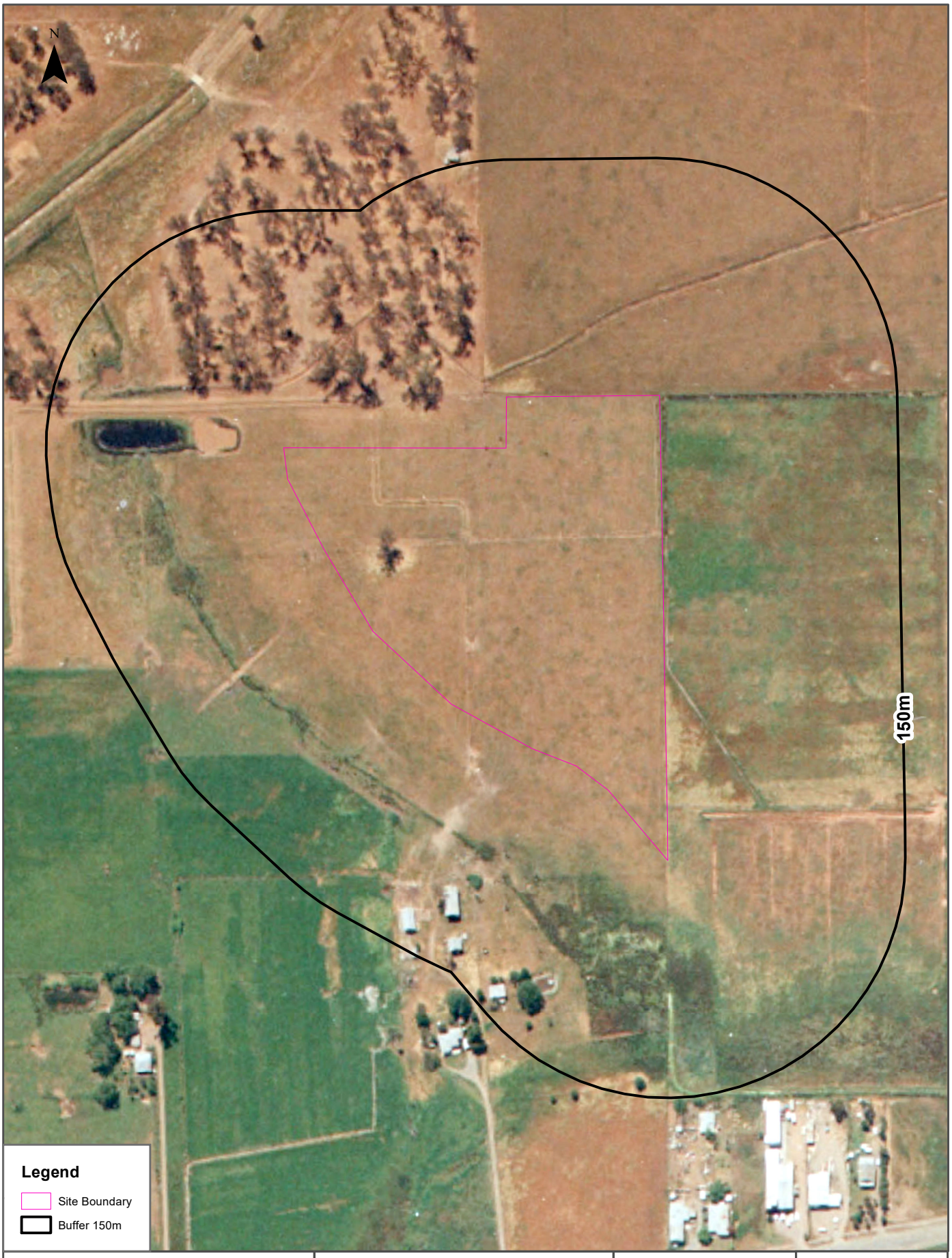
Coordinate System:
GDA 1994 MGA Zone 55

Date: 26 March 2022

Aerial Imagery 1990

294 McLennan Street, Mooroopna, VIC 3629



Data Source Aerial Imagery:
© Department of Environment, Land, Water and Planning
(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55

Date: 26 March 2022

Aerial Imagery 1980

294 McLennan Street, Mooroopna, VIC 3629

Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 26 March 2022

Aerial Imagery 1977

294 McLennan Street, Mooroopna, VIC 3629

Data Source Aerial Imagery:
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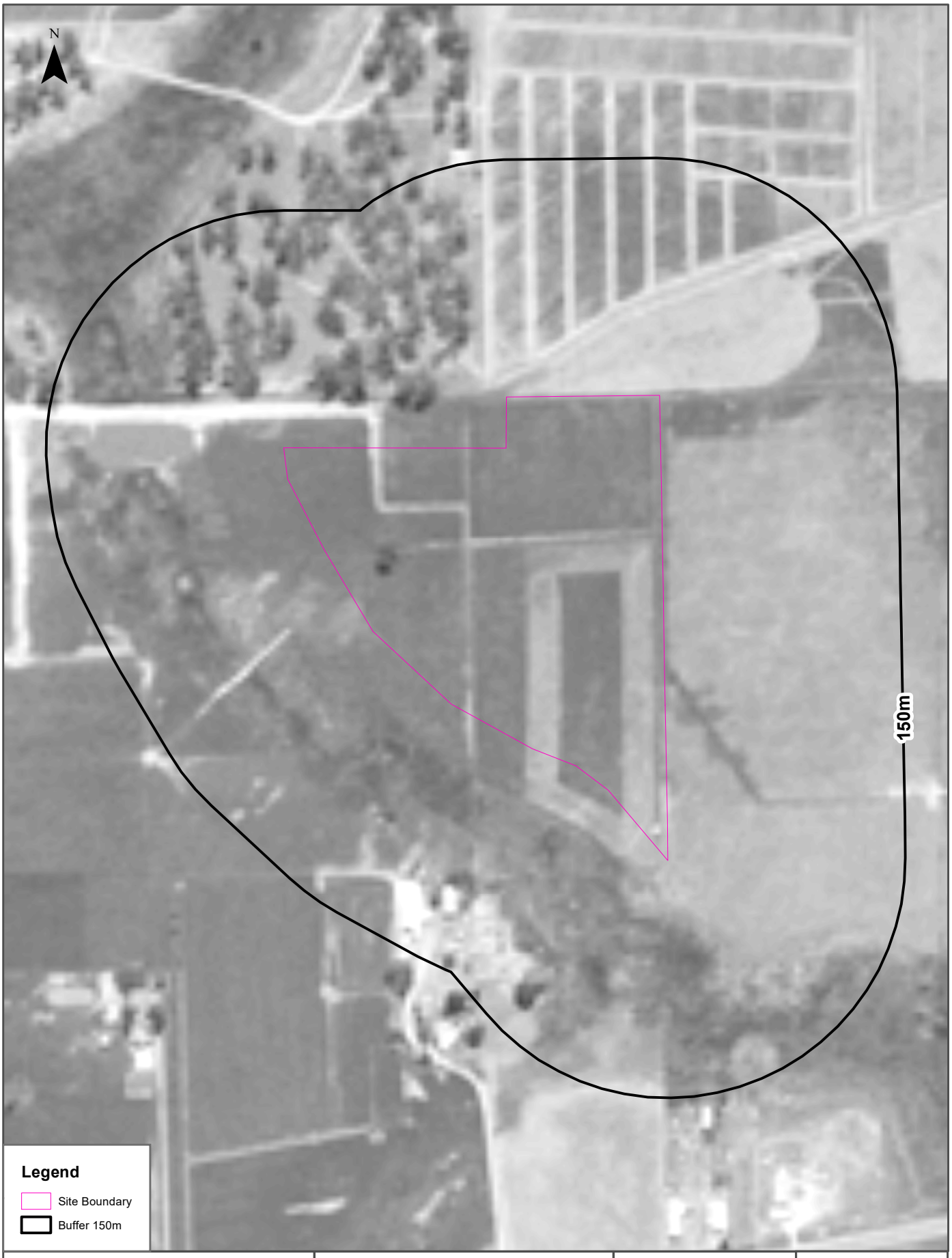
(Vicmap Topographic Mapping Program)

Coordinate System:
GDA 1994 MGA Zone 55

Date: 26 March 2022

Aerial Imagery 1969

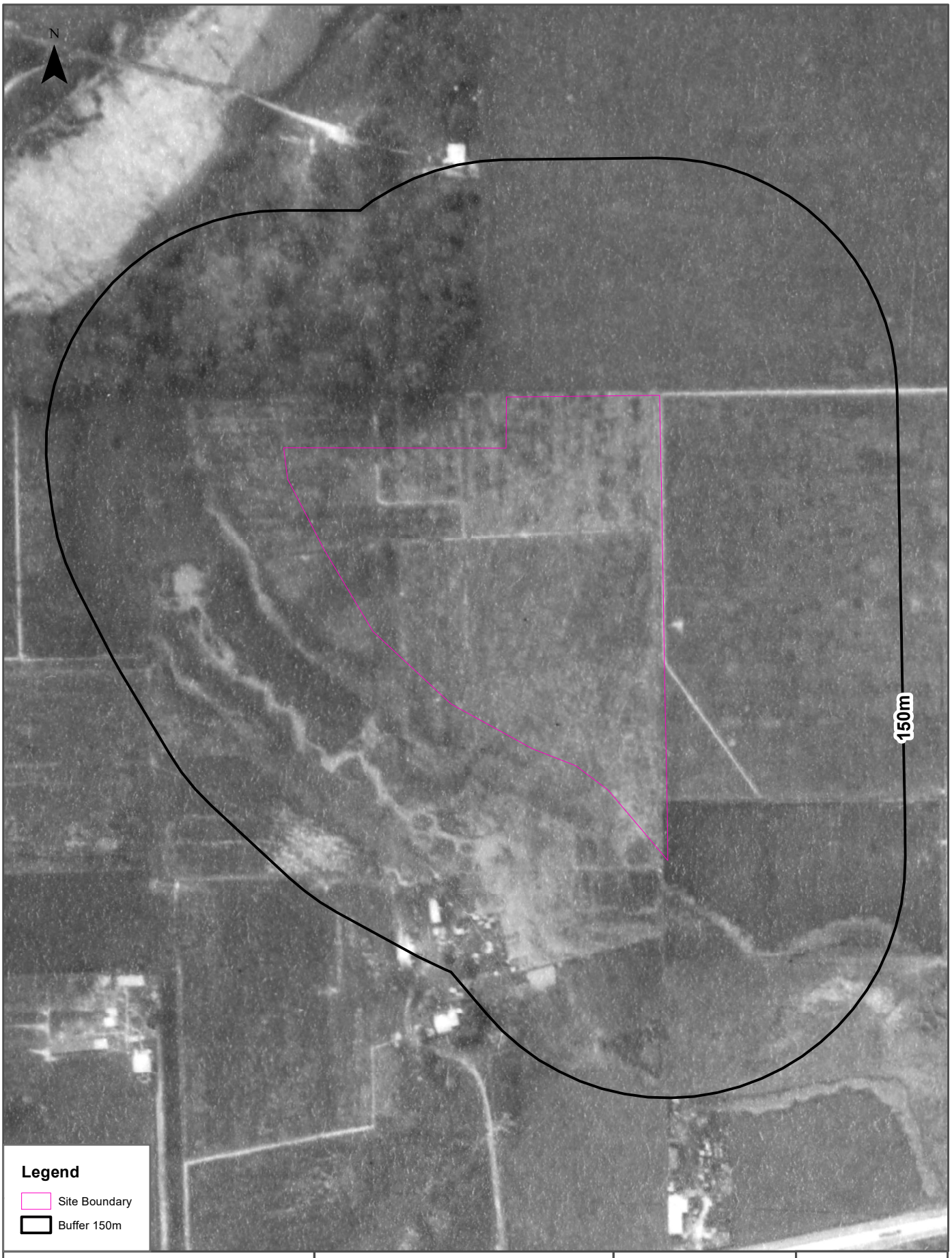
294 McLennan Street, Mooroopna, VIC 3629



Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 26 March 2022

Aerial Imagery 1958

294 McLennan Street, Mooroopna, VIC 3629



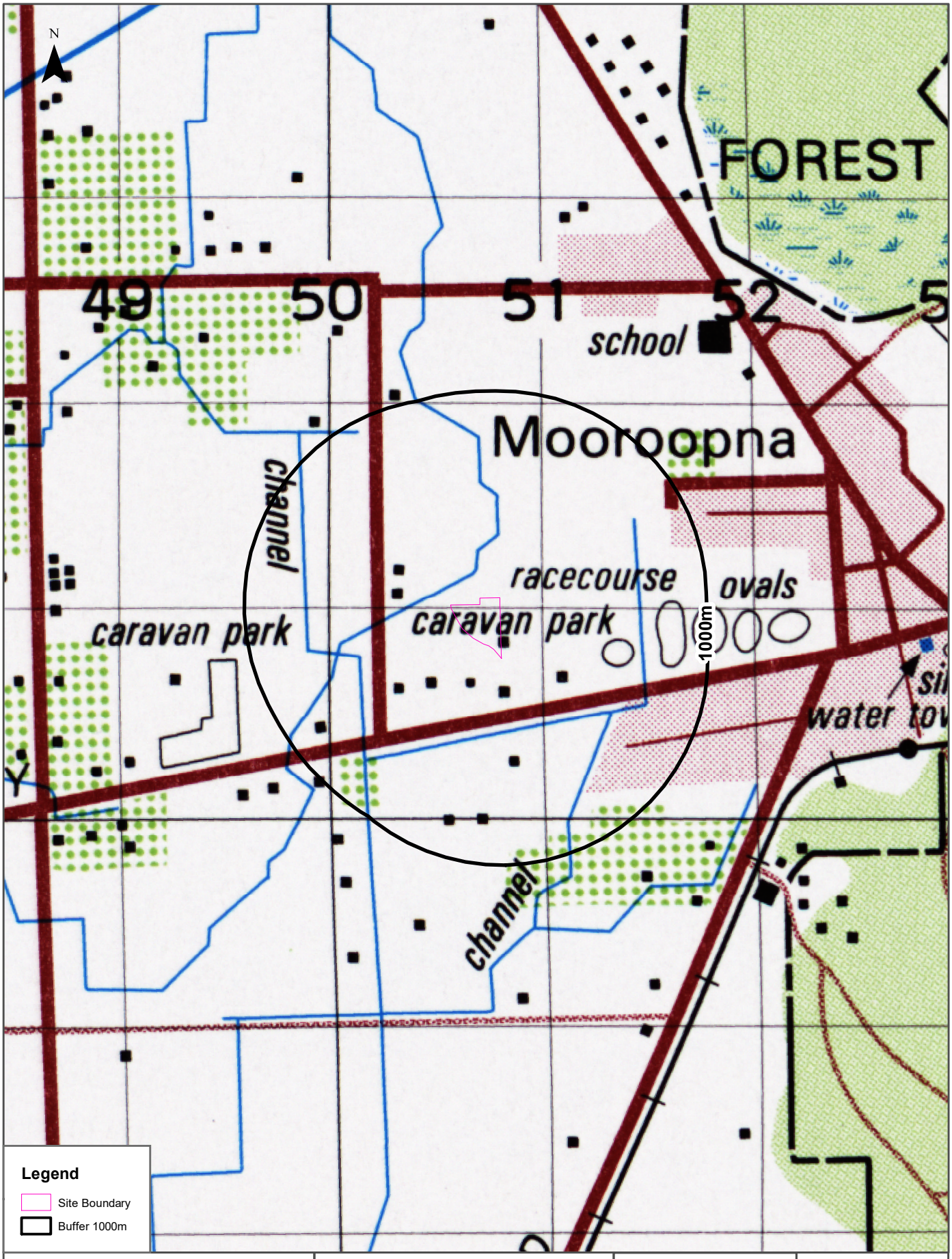
Aerial Imagery 1945

294 McLennan Street, Mooroopna, VIC 3629

Scale: 0 30 60 90 120 Meters	Data Source Aerial Imagery: © Department of Environment, Land, Water and Planning (Vicmap Topographic Mapping Program)	Coordinate System: GDA 1994 MGA Zone 55	Date: 26 March 2022

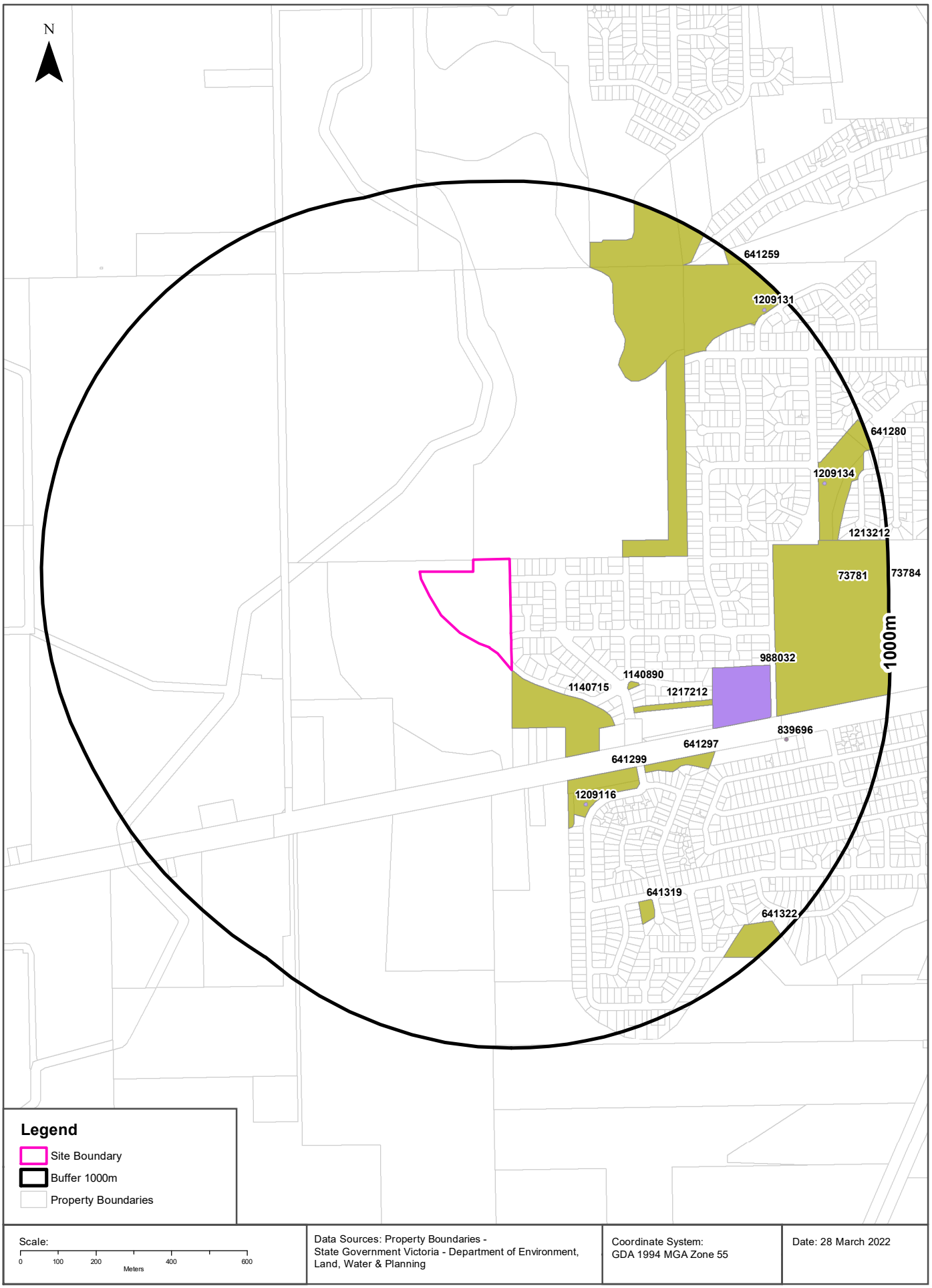
Historical Map 1984

294 McLennan Street, Mooroopna, VIC 3629



Features of Interest

294 McLennan Street, Mooroopna, VIC 3629



Features of Interest

294 McLennan Street, Mooroopna, VIC 3629

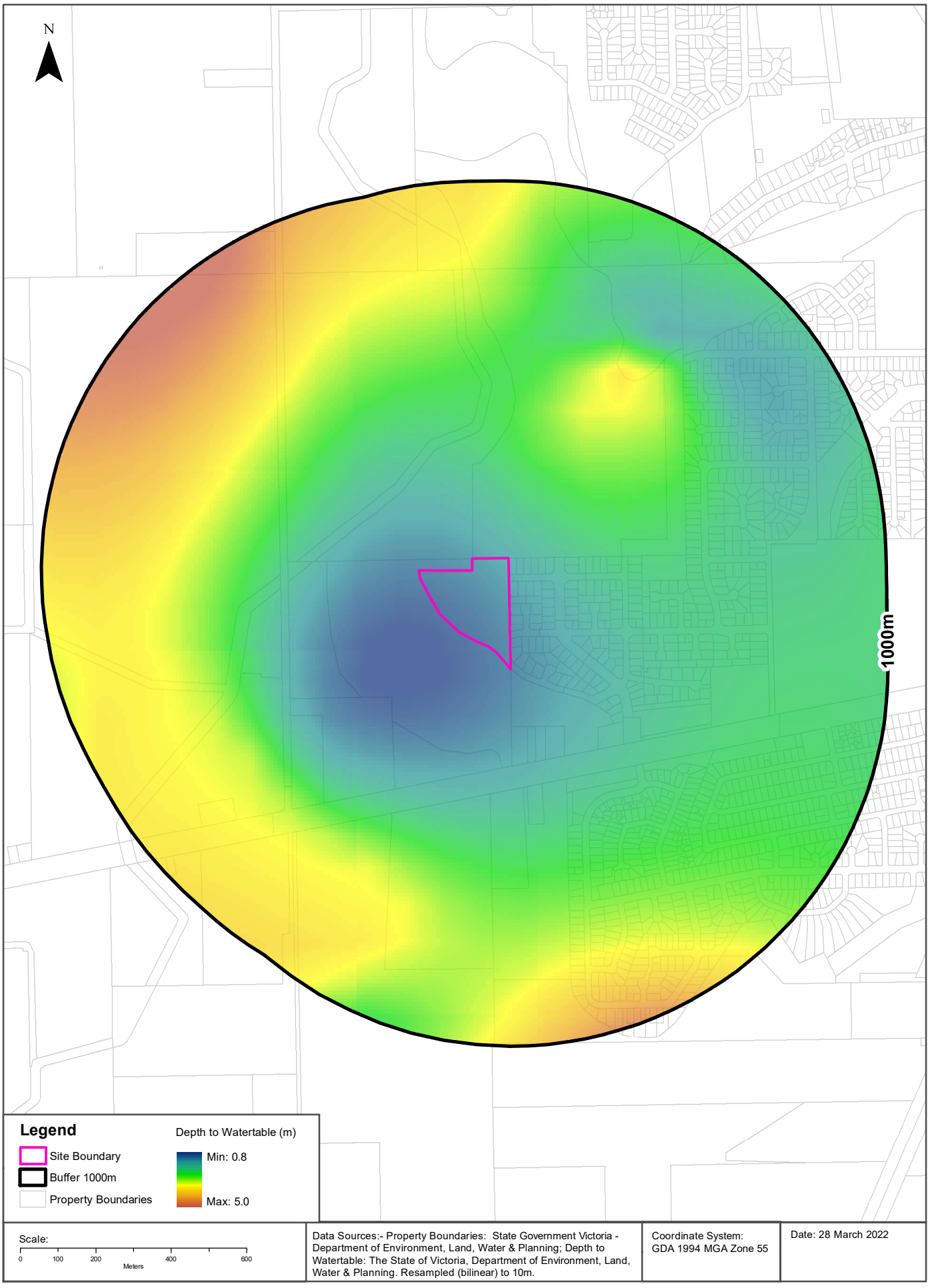
Features of Interest

Features of Interest within the dataset buffer:

Feature Id	Feature Type	Feature Sub Type	Name	Distance	Direction
1140715	reserve	park		0m	South East
641259	reserve	park		297m	North East
1140890	reserve	park		308m	South East
641299	reserve	park	Charles Park	326m	South East
1217212	reserve	park		335m	South East
1209116	recreational resource	playground		400m	South East
641297	reserve	park		430m	South East
988032	community space	caravan park	Finborough Caravan Park	528m	East
1213212	reserve	park	W B Ferrari Park	694m	East
641319	reserve	park		697m	South East
73781	sport facility	training track		706m	East
839696	place of worship	mosque	Mooroopna Mosque	743m	South East
641280	reserve	park	Rodney Park Reserve	819m	East
1209134	recreational resource	playground		850m	East
73784	sport facility	sports ground		890m	East
641322	reserve	park		910m	South East
1209131	recreational resource	playground		937m	North East

Depth to Watertable

294 McLennan Street, Mooroopna, VIC 3629



Hydrogeology & Groundwater

294 McLennan Street, Mooroopna, VIC 3629

Hydrogeology

Description of aquifers within the dataset buffer:

Description	Distance	Direction
Porous, extensive highly productive aquifers	0m	On-site
Porous, extensive aquifers of low to moderate productivity	400m	South East

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

Groundwater Salinity

On-site Groundwater Salinity:

Groundwater Salinity	Percent Of Site Area
1,000 - 3,500 mg/l	100

Depth to Watertable

On-site Depth to Watertable:

Depth to Watertable	Percent Of Site Area
Less than 5 metres	100

Surface Elevation

Approximate on-site Surface Elevation:

Surface Elevation
112 AHDm

Basement Elevation

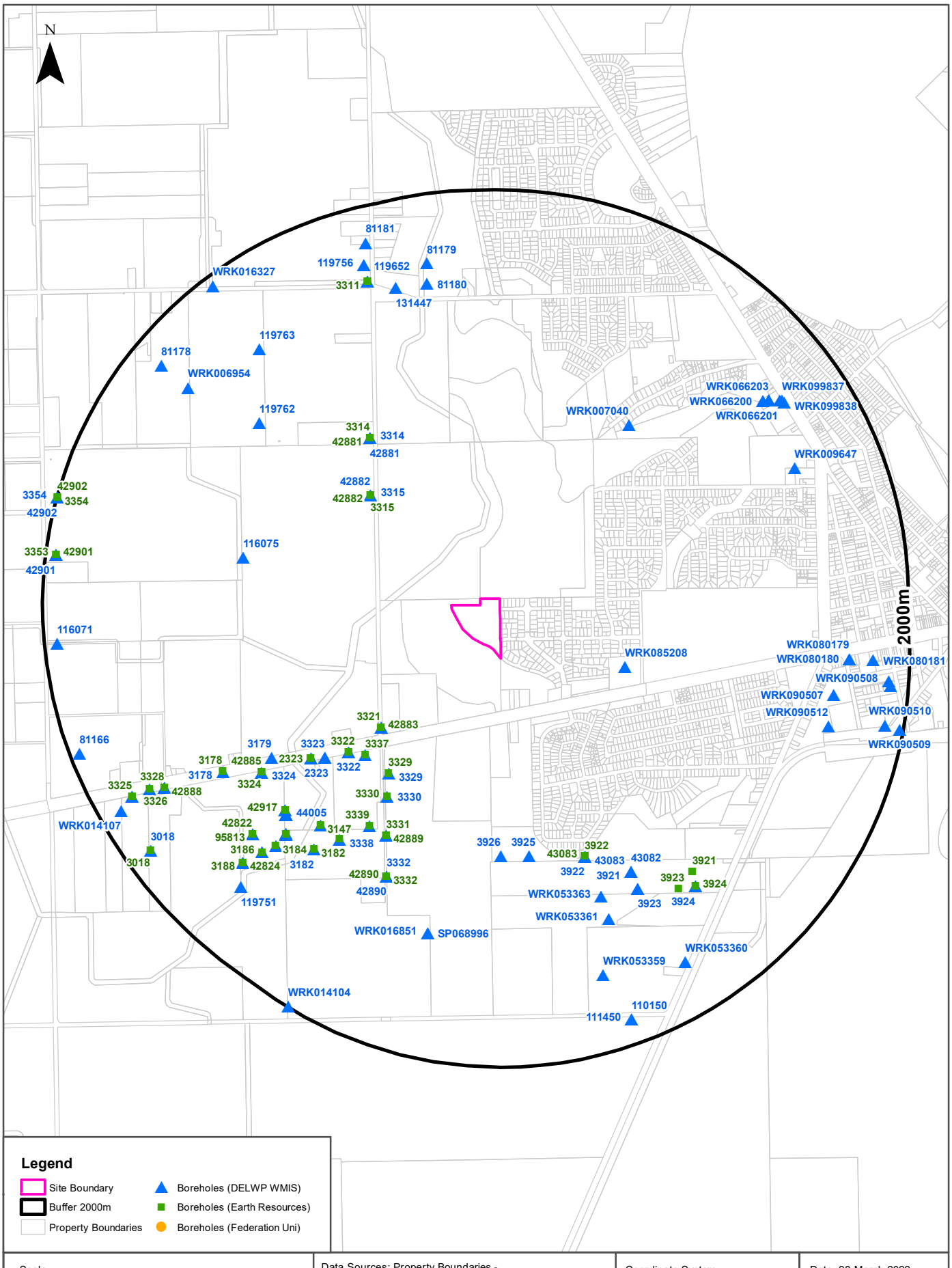
Approximate on-site Basement Elevation:

Basement Elevation - Basement Rocks comprise Lower Palaeozoic basement rocks that form the highlands and the crystalline basement; and Mesozoic rocks of the Otway and Gippsland basins both outcropping and subsurface
-126 AHDm to -110 AHDm

Groundwater Data Custodian: State Government Victoria - Dept of Environment, Land, Water & Planning

Groundwater Boreholes

294 McLennan Street, Mooroopna, VIC 3629



Groundwater Boreholes

294 McLennan Street, Mooroopna, VIC 3629

Boreholes (DELWP WMIS)

Boreholes from the Department of Environment, Land, Water & Planning's Water Measurement Information System, within the dataset buffer:

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
WRK085208	Domestic & Stock	0.00m-0.00m	0.00m-0.00m OUTER LINING - GRAVEL = Not Known			20/05/2016	608m	East
3321	Groundwater Investigation, Observation	0.00m-0.50m RED BROWN CLAY DRY 0.50m-1.50m YELLOW BROWN CLAY MOIST 1.50m-2.00m YELLOW GREY CLAY DAMP 2.00m-3.00m YELLOW BROWN CLAY MOIST 3.00m-4.00m YELLOW BROWN CLAY GREY INCLU MOIST 4.00m-5.50m DARK BROWN CLAY BLACK INCLU MOIST 5.50m-8.00m YELLOW BROWN CLAY GEY INCLU MOIST 8.00m-10.50m ORANGEY BROWN SILTY CLAY GREY INCLU DAMP 10.50m-13.00m YELLOW CLAYEY SAND GREY INCLU WET 13.00m-15.00m YELLOW FINE SAND WET 15.00m-15.50m YELLOW CLAYEY COARSE SAND WET 15.50m-18.50m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST 18.50m-19.00m BROWN CLAYEY SAND GREY INCLU MOIST		Date/time: 2013-07-03 1200 Quality: 47 WLMP: 0.40m DBNS: 0.18m RWL: 112.33 mAHD		10/07/1975	625m	South West
42883	Groundwater Investigation, Observation			Date/time: 1992-09-08 0000 Quality: 47 WLMP: 0.35m DBNS: 0.07m RWL: 112.28 mAHD		10/07/1975	625m	South West
3315	Groundwater Investigation, Observation	0.00m-0.50m BROWN SILTY CLAY DRY 0.50m-3.00m BROWN SILTY CLAY DRY 3.00m-4.50m BROWN WITH GREY SILTY CLAY MOIST 4.50m-10.50m BROWN SILTY CLAY MOIST 10.50m-12.50m BROWN WITH GREY SILTY CLAY WET 12.50m-14.00m GREY WITH BROWN SILTY CLAY WET 14.00m-16.50m GREY WITH ORANGE SILTY CLAY WET 16.50m-20.00m GREY WITH BROWN SILTY CLAY MOIST		Date/time: 2013-07-03 1200 Quality: 47 WLMP: 5.60m DBNS: 5.43m RWL: 105.92 mAHD		13/08/1979	667m	North West
42882	Groundwater Investigation, Observation	0.00m-2.00m REFER TO DRILLERS LOG NUMBERED		Date/time: 2012-08-06 1200 Quality: 47 WLMP: 1.96m DBNS: 1.85m RWL: 109.50 mAHD		13/08/1979	667m	North West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3337	Groundwater Investigation	0.00m-1.00m GREY SILTY CLAY MOIST 1.00m-2.00m YELLOW BROWN SILTY CLAY MOIST 2.00m-4.00m RED BROWN SILTY CLAY WET 4.00m-6.00m YELLOW BROWN SILTY SAND WATER 6.00m-8.00m YELLOW BROWN WITH GREY SILTY CLAY WET 8.00m-11.00m RED BROWN WITH GREY SILTY CLAY WET 11.00m-13.00m YELLOW BROWN WITH GREY SILTY CLAY WET 13.00m-16.50m YELLOW BROWN SILTY CLAY WET 16.50m-22.50m YELLOW BROWN WITH GREY SILTY CLAY WET 22.50m-25.00m RED BROWN WITH GREY SILTY CLAY WET		Date/time: 2000-09-30 0000 Quality: 47 WLMP: 0.73m DBNS: m RWL: mAHD		06/07/1982	777m	South West
3329	Groundwater Investigation	0.00m-0.50m BROWN CLAY MOIST 0.50m-1.00m RED BROWN CLAY MOIST 1.00m-2.50m YELLOW BROWN CLAY MOIST 2.50m-4.50m YELLOW BROWN CLAY GREY INCLU MOIST 4.50m-7.00m YELLOW BROWN CLAY MOIST 7.00m-10.00m YELLOW BROWN CLAY GREY INCLU MOIST 10.00m-11.50m YELLOW BROWN CLAY DAMP 11.50m-13.00m YELLOW BROWN CLAY GREY INCLU MOIST 13.00m-14.00m YELLOW CLAY DAMP 14.00m-14.50m YELLOW BROWN CLAY GREY INCLU DAMP 14.50m-16.00m ORANGEY BROWN CLAY GREY INCLU MOIST 16.00m-17.00m YELLOW SANDY CLAY WET 17.00m-18.50m YELLOW BROWN CLAYEY SAND GREY INCLU DAMP 18.50m-19.00m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST		Date/time: 2000-10-27 0000 Quality: 47 WLMP: 2.00m DBNS: m RWL: mAHD		18/09/1975	779m	South West
3322	Groundwater Investigation, Observation	0.00m-0.50m BROWN CLAY MOIST 0.50m-4.00m YELLOW BROWN CLAY MOIST 4.00m-8.00m BROWN CLAY GREY INCLU MOIST 8.00m-8.50m YELLOW BROWN SILTY CLAY MOIST 8.50m-10.50m ORANGEY BROWN CLAY GREY INCLU MOIST 10.50m-11.50m ORANGEY BROWN SANDY CLAY GREY INCLU MOIST 11.50m-13.00m YELLOW CLAYEY FINE SAND WET 13.00m-13.50m YELLOW MED FINE SAND WET 13.50m-14.00m YELLOW MED COARSE SAND WET 14.00m-14.50m YELLOW COARSE SAND WET 14.50m-15.00m YELLOW CLAYEY COARSE SAND WET 15.00m-15.50m ORANGEY RED SILTY CLAY GREY INCLU MOIST 15.50m-16.50m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST		Date/time: 1997-06-11 1400 Quality: 47 WLMP: 2.45m DBNS: 2.32m RWL: 110.17 mAHD		11/07/1975	822m	South West
42884	Groundwater Investigation, Observation			Date/time: 1994-09-14 0000 Quality: 47 WLMP: 1.73m DBNS: 1.59m RWL: 110.90 mAHD		01/01/1950	822m	South West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3330	Groundwater Investigation	0.00m-2.00m BROWN CLAY MOIST 2.00m-3.00m RED BROWN CLAY MOIST 3.00m-3.50m BROWN CLAY GREY INCLU MOIST 3.50m-4.00m YELLOW BROWN CLAY MOIST 4.00m-5.00m DARK BROWN CLAY MOIST 5.00m-6.00m YELLOW BROWN CLAY GREY INCLU MOIST 6.00m-6.50m ORANGEY BROWN CLAY GREY INCLU MOIST 6.50m-9.50m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST 9.50m-11.00m YELLOW BROWN SILTY CLAY GREY INCLU MOIST 11.00m-11.50m RED BROWN SILTY CLAY GREY INCLU MOIST 11.50m-13.50m YELLOW SILTY CLAY GREY INCLU DAMP 13.50m-14.00m YELLOW SANDY CLAY GREY INCLU WET 14.00m-16.50m ORANGEY BROWN CLAY GREY INCLU MOIST 16.50m-19.00m YELLOW BROWN CLAY GREY INCLU MOIST		Date/time: 2000-10-27 0000 Quality: 47 WLMP: 3.33m DBNS: m RWL: mAHD		19/09/1975	875m	South West
3314	Groundwater Investigation, Observation	0.00m-1.00m RED SILTY CLAY MOIST 1.00m-1.50m BROWN SILTY CLAY MOIST 1.50m-2.50m BROWN WITH GREY AND ORANGE SILTY CLAY MOIST 2.50m-3.50m BROWN WITH GREY AND BLACK SILTY CLAY MOIST 3.50m-4.00m BROWN SILTY CLAY MOIST 4.00m-5.50m BROWN WITH GREY SILTY CLAY MOIST 5.50m-6.50m BROWN SILTY CLAY MOIST 6.50m-7.00m BROWN WITH GREY AND ORANGE SILTY CLAY MOIST 7.00m-15.00m BROWN WITH GREY SILTY CLAY WET 15.00m-16.00m BROWN WITH GREY SILTY CLAY MOIST 16.00m-20.00m GREY WITH BROWN SILTY CLAY MOIST		Date/time: 2013-07-03 1200 Quality: 47 WLMP: 5.50m DBNS: 5.36m RWL: 105.31 mAHD		24/07/1979	909m	North West
42881	Groundwater Investigation, Observation			Date/time: 1997-06-24 1200 Quality: 47 WLMP: 0.80m DBNS: 0.63m RWL: 111.33mAHD		24/07/1979	909m	North West
3323	Groundwater Investigation, Observation	0.00m-0.50m BROWN CLAY MOIST 0.50m-1.50m YELLOW BROWN CLAY MOIST 1.50m-2.50m BROWN CLAY MOIST 2.50m-4.50m YELLOW BROWN CLAY GREY INCLU MOIST 4.50m-5.00m RED BROWN CLAY MOIST 5.00m-6.00m BROWN CLAY MOIST 6.00m-8.50m YELLOW BROWN SILTY CLAY GREY INCLU MOIST 8.50m-10.00m YELLOW SILTY CLAY GREY INCLU MOIST 10.00m-11.00m BROWN SILTY CLAY GREY INCLU MOIST 11.00m-13.00m GREY SANDY CLAY WET 13.00m-13.50m GREY SILTY CLAY ORANGE INCLU MOIST 13.50m-16.50m ORANGEY BROWN CLAY GREY INCLU MOIST 16.50m-17.50m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST		Date/time: 1993-06-29 0100 Quality: 47 WLMP: 3.00m DBNS: 2.88m RWL: 109.00 mAHD		14/07/1975	924m	South West
44000	Groundwater Investigation, Observation			Date/time: 1988-01-28 0000 Quality: 47 WLMP: 1.00m DBNS: 0.80m RWL: 111.08mAHD		01/01/1950	924m	South West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3926	Groundwater Investigation	0.00m-0.50m BROWN CLAY MOIST 0.50m-1.50m YELLOW BROWN CLAY MOIST 1.50m-3.00m BROWN CLAY MOIST 3.00m-4.50m BROWN CLAY GREY INCLU MOIST 4.50m-5.50m RED BROWN CLAY GREY INCLU MOIST 5.50m-6.00m BROWN CLAY GREY INCLU MOIST 6.00m-8.50m YELLOW BROWN CLAY MOIST 8.50m-9.50m YELLOW SILTY CLAY GREY INCLU WET 9.50m-10.00m GREY SILTY CLAY DAMP 10.00m-11.50m YELLOW FINE CLAYEY SAND WET 11.50m-12.00m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST 12.00m-14.00m YELLOW BROWN SANDY CLAY GREY INCLU DAMP 14.00m-16.50m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST				20/10/1975	966m	South
3925	Groundwater Investigation	0.00m-1.00m YELLOW GREY CLAY MOIST 1.00m-1.50m WHITE CLAY DRY 1.50m-2.00m BROWN CLAY WHITE INCLU MOIST 2.00m-2.50m GREY CLAY YELLOW INCLU MOIST 2.50m-4.50m YELLOWEY GREY CLAY MOIST 4.50m-5.50m RED BROWN CLAY GREY INCLU MOIST 5.50m-6.50m ORANGEY BROWN CLAY GREY INCLU MOIST 6.50m-8.00m YELLOW BROWN SILTY CLAY GREY INCLU MOIST 8.00m-9.50m YELLOW BROWN SILTY SANDY CLAY GREY INCLU DAMP 9.50m-13.00m ORANGEY BROWN CLAY GREY INCLU MOIST 13.00m-14.00m YELLOW BROWN SILTY CLAY GREY INCLU DAMP 14.00m-17.50m YELLOW MED COARSE SAND WET 17.50m-18.00m YELLOW BROWN CLAYEY SAND WET 18.00m-19.00m ORANGEY CLAY GREY INCLU MOIST				17/10/1975	976m	South
2323	Groundwater Investigation	0.00m-1.00m BR SZC MOIST 1.00m-4.00m BR ZC MOIST 4.00m-5.50m BR ZSC WET 5.50m-8.50m BR ZS FINE WET 8.50m-10.00m GRY BR ZC MOIST 10.00m-13.50m BR GRY ZC MOIST 13.50m-14.50m BR GRY SZC MOIST 14.50m-16.00m BR GRY ZSC WET 16.00m-18.00m GRY BR SZC WET 18.00m-19.00m GRY BR ZC WET 19.00m-20.00m GRY BR ZC MOIST				18/10/1976	977m	South West
42600	Groundwater Investigation					01/01/1950	977m	South West
3331	Groundwater Investigation, Observation	0.50m-1.00m LIGHT BROWN CLAY 1.00m-2.00m YELLOW BROWN CLAY 2.50m-7.00m BROWN CLAY 7.50m-11.50m BROWN S/C 12.00m-20.00m GREY BROWN S/C		Date/time: 2013-07-03 1200 Quality: 47 WLMP: 5.80m DBNS: 5.63m RWL: 107.50 mAHD		22/07/1976	1032 m	South West
42889	Groundwater Investigation, Observation			Date/time: 2013-02-06 1200 Quality: 47 WLMP: 1.96m DBNS: 1.88m RWL: 111.25mAHD		22/07/1976	1032 m	South West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3339	Groundwater Investigation	0.00m-2.50m YELLOW BROWN SILTY CLAY MOIST 2.50m-4.00m YELLOW BROWN WITH GREY SILTY CLAY MOIST 4.00m-8.50m YELLOW BROWN SILTY CLAY MOIST 8.50m-13.00m RED BROWN SILTY CLAY WET 13.00m-14.50m RED BROWN WITH GREY SILTY CLAY WET 14.50m-19.50m YELLOW BROWN WITH GREY SILTY CLAY WET 19.50m-22.00m RED BROWN WITH GREY SILTY CLAY WET 22.00m-24.00m SAMPLES WASHED OFF AUGERS 24.00m-25.00m RED BROWN WITH GREY SILTY CLAY WET		Date/time: 2000-10-10 0000 Quality: 47 WLMP: 10.84m DBNS: m RWL: mAHD		01/07/1982	1042 m	South West
116075	Groundwater Investigation	0.00m-1.00m LIGHT BROWN SANDY CLAY MOIST 1.00m-1.50m REDY BROWN SILTY CLAY MOIST 1.50m-4.00m ORANGEY BROWN SILTY CLAY MOIST 4.00m-15.00m SILTS AND SANDS MOIST	0.00m-12.00m INNER LINING - CASING = Pvc 12.00m-15.00m INNER LINING - SCREEN = Pvc	Date/time: 1994-12-06 0000 Quality: 47 WLMP: 4.32m DBNS: m RWL: mAHD		26/05/1994	1045 m	West
3922	Groundwater Investigation, Observation	0.00m-0.50m RED BROWN CLAY MOIST 0.50m-2.50m YELLOW BROWN CLAY MOIST 2.50m-3.00m BROWN SILTY CLAY MOIST 3.00m-4.00m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST 4.00m-5.00m YELLOW BROWN SILTY CLAY GREY INCLU MOIST 5.00m-5.50m GREY CLAY YELLOW INCLU MOIST 5.50m-6.50m GREY SILTY CLAY YELLOW BROWN INCLU DAMP 6.50m-7.00m ORANGEY BROWN SANDY CLAY GREY INCLU DAMP 7.00m-10.50m ORANGEY BROWN SILTY CLAY GREY INCLU DAMP 10.50m-11.50m YELLOW CLAYEY FINE SAND GREY INCLU WET 11.50m-12.00m YELLOW BROWN CLAYEY FINE SAND WET 12.00m-12.50m BROWN CLAY GREY INCLU MOIST 12.50m-13.00m YELLOW BROWN CLAY GREY INCLU MOIST 13.00m-14.00m GREY SILTY CLAY ORANGE INCLU MOIST 14.00m-15.50m YELLOWEY ORANGE SILTY CLAY GREY INCLU DAMP 15.50m-16.00m GREY SILTY CLAY YELLOW INCLU DAMP 16.00m-17.00m YELLOW MED COARSE SAND WET 17.00m-18.50m BROWN MED COARSE SAND WET 18.50m-21.00m YELLOW BROWN CLAY GREY INCLU MOIST		Date/time: 2001-05-17 1400 Quality: 47 WLMP: 5.40m DBNS: 5.20m RWL: 107.39 mAHD		07/10/1975	1052 m	South East
43083	Groundwater Investigation, Observation			Date/time: 1988-02-24 0000 Quality: 47 WLMP: 1.40m DBNS: 1.20m RWL: 111.39mAHD		01/01/1950	1052 m	South East
WRK007040	Miscellaneous	0.00m-4.00m BROWN CLAY 4.00m-6.00m BROWN SANDY CLAY 6.00m-10.00m GREY WHITE CLAY 10.00m-20.00m BROWN CLAY 20.00m-22.50m SAND	0.20m-14.50m INNER LINING - CASING = Pvc 14.50m-20.50m INNER LINING - SCREEN = Pvc 20.50m-22.50m INNER LINING - SCREEN = Slotted Pvc 0.00m-0.00m OUTER LINING - GRAVEL = Gravel			06/02/1995	1059 m	North East
3179	Groundwater Investigation	0.00m-3.00m SILTY CLAY MOIST 3.00m-12.00m SILTY CLAY WT 12.00m-18.00m SAND WATER 18.00m-20.00m SILTY CLAY WET 20.00m-22.00m SAND WATER 22.00m-25.00m SILTY CLAY WET				27/10/1981	1128 m	South West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3147	Groundwater Investigation	0.00m-11.00m SILTY CLAY MOIST 11.00m-20.00m SILTY CLAY WET 20.00m-20.60m SAND WATER 20.60m-25.00m SILTY CLAY WET		Date/time: 2000-09-30 0000 Quality: 47 WLMP: 1.24m DBNS: m RWL: mAHD		28/10/1981	1180 m	South West
3338	Groundwater Investigation	0.00m-2.50m YELLOW BROWN SILTY CLAY MOIST 2.50m-5.50m YELLOW BROWN WITH GREY SILTY CLAY MOIST 5.50m-7.00m YELLOW BROWN SILTY CLAY MOIST 7.00m-8.50m YELLOW BROWN WITH GREY SILTY CLAY MOIST				02/07/1982	1181 m	South West
3332	Groundwater Investigation, Observation	0.50m-1.00m LIGHT BROWN CLAY 1.00m-1.50m BROWN CLAY 1.50m-4.50m YELLOW CLAY 5.00m-7.00m BROWN CLAY 7.50m-8.00m GREY YELLOW S/C 8.50m-10.50m GREY RED S/C 11.00m-12.50m GREY BROWN S/C 13.00m-13.50m GREY YELLOW S/C 14.00m-16.00m YELLOW MED SAND 16.50m-20.00m GREY BROWN S/C		Date/time: 2013-07-22 1200 Quality: 47 WLMP: 1.32m DBNS: 1.10m RWL: 112.30 mAHD		23/07/1976	1204 m	South
42890	Groundwater Investigation, Observation			Date/time: 1992-09-08 0000 Quality: 47 WLMP: 2.00m DBNS: 1.56m RWL: 110.98 mAHD		23/07/1976	1204 m	South
3324	Groundwater Investigation, Observation	0.00m-0.50m RED BROWN CLAY MOIST 0.50m-1.50m YELLOW CLAY MOIST 1.50m-2.00m ORANGEY RED CLAY MOIST 2.00m-3.00m YELLOW BROWN SILTY CLAY MOIST 3.00m-5.00m YELLOW BROWN CLAY GREY INCLU MOIST 5.00m-6.00m ORANGEY BROWN SILTY CLAY MOIST 6.00m-6.50m YELLOW SILTY CLAY MOIST 6.50m-8.50m YELLOW CLAY GREY INCLU MOIST 8.50m-9.00m RED BROWN CLAY GREY INCLU MOIST 9.00m-10.00m RED SILTY CLAY GREY INCLU DAMP 10.00m-12.00m YELLOW SILTY CLAY GREY INCLU DAMP 12.00m-14.50m BROWN FINE SAND WET 14.50m-17.50m YELLOW GREY MED FINE SAND WET 17.50m-18.00m GREY CLAYEY FINE SAND WET 18.00m-18.50m YELLOW BROWN SILTY CLAY DAMP		Date/time: 2000-09-27 0000 Quality: 47 WLMP: 0.71m DBNS: 0.54m RWL: 111.70mAHD		16/07/1975	1209 m	South West
42885	Groundwater Investigation, Observation			Date/time: 1999-08-24 1400 Quality: 47 WLMP: 1.45m DBNS: 1.19m RWL: 111.05mAHD		16/07/1975	1209 m	South West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3921	Groundwater Investigation, Observation	0.00m-0.50m ORANGEY BROWN CLAY MOIST 0.50m-2.00m YELLOW BROWN CLAY MOIST 2.00m-3.50m YELLOW BROWN SILTY CLAY GREY INCLU MOIST 3.50m-5.00m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST 5.00m-5.50m GREY SILTY CLAY BROWN INCLU MOIST 5.50m-6.00m ORANGEY BROWN SILTY CLAY MOIST 6.00m-6.50m GREY SILTY CLAY BROWN INCLU MOIST 6.50m-7.00m YELLOW GREY SILTY CLAY WET 7.00m-8.00m YELLOW BROWN FINE SAND WET 8.00m-10.00m ORANGEY BROWN CLAY GREY INCLU MOIST 10.00m-11.00m YELLOW BROWN SANDY CLAY DAMP 11.00m-13.00m NO SAMPLE WET 13.00m-14.00m YELLOW GREY CLAYEY FINE SAND WET 14.00m-15.00m YELLOW BROWN CLAYEY FINE SAND WET 15.00m-16.00m YELLOW BROWN MED COARSE SAND WET 16.00m-17.00m GREY COARSE SAND WET 17.00m-17.50m YELLOW BROWN CLAYEY MED COARSE SAND WET 17.50m-19.00m YELLOW BROWN CLAY GREY INCLU MOIST		Date/time: 2013-07-22 1200 Quality: 47 WLMP: 5.12m DBNS: 4.91m RWL: 107.50 mAHD		06/10/1975	1223 m	South East
43082	Groundwater Investigation, Observation			Date/time: 2013-05-17 1200 Quality: 47 WLMP: 1.67m DBNS: 1.44m RWL: 110.97 mAHD		01/01/1950	1223 m	South East
42917	Groundwater Investigation	13.50m-21.50m SAND BROWN FINE				14/12/1981	1242 m	South West
95816	Groundwater Investigation	0.00m-13.50m SILTY CLAY MOIST 13.50m-21.50m SAND WET 21.50m-22.50m SILTY CLAY MOIST				14/12/1981	1242 m	South West
3390	Groundwater Investigation	0.00m-12.00m SILTY CLAY MOIST 12.00m-14.50m SAND BROWN FINE WET 14.50m-17.00m BROWN MED COARSE SAND WET				16/12/1981	1256 m	South West
44003	Groundwater Investigation	11.50m-16.50m BROWN MED FINE SAND				17/12/1981	1256 m	South West
44004	Groundwater Investigation	12.00m-16.70m BROWN FINE SAND				18/12/1981	1256 m	South West
44005	Groundwater Investigation	11.00m-14.50m BROWN FINE SAND 14.50m-17.00m BROWN COARSE SAND				27/01/1982	1256 m	South West
44006	Groundwater Investigation					01/01/1950	1256 m	South West
44007	Groundwater Investigation		0.00m-13.00m INNER LINING - CASING = Pvc 13.00m-18.00m INNER LINING - SCREEN = Slotted Pvc 13.00m-18.00m OUTER LINING - GRAVEL = Seal			13/10/1982	1256 m	South West
44008	Groundwater Investigation					12/10/1982	1256 m	South West
45513	Groundwater Investigation	12.00m-14.50m BROWN FINE SAND 14.50m-17.00m BROWN MED COARSE SAND				16/12/1981	1256 m	South West
WRK053363	Observation	0.00m-1.00m Brown Silty Clay 1.00m-9.00m Brown Silty Sandy Clay 9.00m-10.50m Brown Fine sand 10.50m-11.50m Brown & grey Silty Clay		Date/time: 2010-02-10 1400 Quality: 47 WLMP: 7.40m DBNS: m RWL: mAHD		30/01/2010	1263 m	South East
3182	Groundwater Investigation					01/01/1950	1291 m	South West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
119762	Groundwater Investigation	0.00m-0.50m ORANGEY BROWN SANDY CLAY MOIST 0.50m-1.00m RED AND ORANGE SANDY CLAY MOIST 1.00m-1.50m ORANGE FINE SAND MOIST 1.50m-2.50m ORANGE BROWN FINE SAND MOIST 2.50m-4.00m BROWN FINE SAND MOIST 4.00m-5.50m FINE SAND MOIST 5.50m-12.00m MEDIUM SAND WET 12.00m-12.50m SILTS AND SANDS	0.00m-9.50m INNER LINING - CASING = Pvc 0.00m-12.50m INNER LINING - CASING = Not Known 9.50m-12.50m INNER LINING - SCREEN = Pvc	Date/time: 1994-12-06 0000 Quality: 47 WLMP: 5.18m DBNS: m RWL: mAHD		17/05/1994	1296 m	North West
3923	Groundwater Investigation, Observation	0.00m-0.50m ORANGEY BROWN CLAY MOIST 0.50m-2.00m YELLOW BROWN CLAY MOIST 2.00m-3.50m YELLOW BROWN SILTY CLAY DAMP 3.50m-5.50m BROWN FINE SAND WET 5.50m-6.50m ORANGEY BROWN CLAY GREY INCLU MOIST 6.50m-8.50m YELLOW BROWN CLAY GREY INCLU MOIST 8.50m-9.50m GREY SILTY CLAY YELLOW BROWN INCLU MOIST 9.50m-11.50m ORANGEY BROWN SILTY CLAY GREY INCLU MOIST 11.50m-12.00m GREY SILTY CLAY YELLOW INCLU DAMP 12.00m-13.50m GREY SILTY CLAY ORANGEY BROWN INCLU DAMP 13.50m-15.00m YELLOW SILTY CLAY GREY INCLU DAMP 15.00m-16.00m ORANGEY BROWN SILTY CLAY GREY INCLU DAMP 16.00m-17.50m YELLOW MED FINE SAND WET 17.50m-18.50m GREY SILTY CLAY ORANGEY BROWN INCLU DAMP 18.50m-20.50m YELLOW BROWN MED COARSE SAND WET 20.50m-21.00m BROWN COARSE CLAYEY SAND WET 21.00m-22.00m ORANGEY YELLOW SILTY CLAY GREY INCLU MOIST		Date/time: 2013-07-22 1200 Quality: 47 WLMP: 5.18m DBNS: 4.98m RWL: 107.43 mAHD		09/10/1975	1309 m	South East
44017	Groundwater Investigation, Observation			Date/time: 1987-09-23 0000 Quality: 47 WLMP: 1.20m DBNS: 1.13m RWL: 111.72mAHD		01/01/1950	1309 m	South East
119750	Groundwater Investigation	0.00m-0.50m GREY BROWN SANDY CLAY MOIST 0.50m-1.50m LIGHT BROWN SILTY CLAY MOIST 1.50m-4.00m BROWN SILTY CLAY MOIST 4.00m-12.50m SILTY CLAY MOIST 12.50m-14.50m FINE SAND WET 14.50m-15.50m MEDIUM SAND WET 15.50m-16.00m SILTY CLAY MOIST	0.00m-13.00m INNER LINING - CASING = Pvc 13.00m-16.00m INNER LINING - SCREEN = Pvc	Date/time: 1994-09-14 0000 Quality: 47 WLMP: 3.92m DBNS: m RWL: mAHD	13.00m-16.00m	24/03/1994	1322 m	South West
42919	Groundwater Investigation	12.00m-17.00m BROWN FINE SAND				15/12/1981	1326 m	South West
95817	Groundwater Investigation	0.00m-12.00m SILTY CLAY MOIST 12.00m-17.00m SAND WET 17.00m-19.50m SILTY CLAY MOIST				15/12/1981	1326 m	South West
3178	Groundwater Investigation	0.00m-10.00m SILTY CLAY MOIST 10.00m-15.00m SILTY CLAY WET 15.00m-16.00m SAND WATER 16.00m-19.50m SILTY CLAY WET 19.50m-21.00m SAND WATER 21.00m-25.00m SILTY CLAY WET				26/10/1981	1366 m	South West
WRK053361	Observation	0.00m-1.00m Brown Silty Clay 1.00m-4.00m Brown Silty sandy clay 4.00m-5.00m Brown Fine sandy clay 5.00m-6.50m Brown fine sand 6.50m-12.00m Brown silty sandy clay 12.00m-14.00m Brown fine clayey sand 14.00m-14.50m brown & Grey silty sandy clay		Date/time: 2010-02-10 1400 Quality: 47 WLMP: 8.00m DBNS: m RWL: mAHD		29/01/2010	1380 m	South East
SP068996	Domestic & Stock	0.00m-1.00m Orange Red Clay 1.00m-2.00m Grey Clay 2.00m-2.50m Red Clay 2.50m-6.00m Grey Brown 6.00m-10.50m Medium Sand	0.00m-9.00m INNER LINING - CASING = Pvc 9.00m-10.50m INNER LINING - SCREEN = Pvc 0.00m-0.10m OUTER LINING - GRAVEL = Gravel		9.00m-10.50m Sand	27/08/2009	1391 m	South

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
WRK016851	Domestic & Stock	0.00m-1.00m GREY clay 1.00m-6.00m Orange brown clay 6.00m-9.00m SANDy grey white clay 9.00m-13.00m MEdium sand	0.00m-11.50m INNER LINING - CASING = Pvc 11.50m-13.00m INNER LINING - SCREEN = Pvc		11.50m-13.00m Sand	27/08/2009	1391 m	South
3184	Groundwater Investigation	0.00m-9.00m SILTY CLAY MOIST 9.00m-13.50m SILTY CLAY WET 13.50m-15.00m SAND WATER 15.00m-20.00m SILTY CLAY WET				24/11/1981	1401 m	South West
42822	Groundwater Investigation					29/10/1981	1436 m	South West
95813	Groundwater Investigation	0.00m-14.00m SILTY CLAY WET 14.00m-18.00m SAND WATER 18.00m-25.50m SILTY CLAY WET				29/10/1981	1436 m	South West
3924	Groundwater Investigation, Observation	0.00m-0.50m RED BROWN CLAY MOIST 0.50m-1.50m YELLOW BROWN CLAY MOIST 1.50m-3.50m YELLOW BROWN SILTY CLAY DAMP 3.50m-5.00m YELLOW BROWN FINE SAND WET 5.00m-6.00m GREY CLAY ORANGE INCLU MOIST 6.00m-9.50m YELLOW BROWN CLAY GREY INCLU MOIST 9.50m-11.00m GREY SILTY CLAY BROWN INCLU MOIST 11.00m-13.00m ORANGEY BROWN SILTY CLAY GREY INCLU DAMP 13.00m-15.00m YELLOW CLAYEY SAND GREY INCLU WET 15.00m-17.00m YELLOW BROWN MED FINE SAND WET 17.00m-18.00m YELLOW FINE SAND WET 18.00m-19.00m YELLOW BROWN CLAY GREY INCLU MOIST		Date/time: 2000-10-15 0000 Quality: 47 WLMP: 6.18m DBNS: 5.98m RWL: 106.87 mAHD		10/10/1975	1465 m	South East
44018	Groundwater Investigation, Observation			Date/time: 1988-01-28 0000 Quality: 47 WLMP: 1.00m DBNS: 0.93m RWL: 111.92mAHD		01/01/1950	1465 m	South East
3186	Groundwater Investigation	0.00m-9.00m SILTY CLAY MOIST 9.00m-12.00m SILTY CLAY WET 12.00m-14.00m SAND WATER 14.00m-25.00m SILTY CLAY WET				23/11/1981	1470 m	South West
81180	Domestic	0.00m-4.00m BROWN SILTY CLAY 4.00m-5.00m RED/BROWN SILTY SANDY CLAY 5.00m-7.00m BROWN SILTY CLAY WITH SAND 7.00m-10.00m BROWN & GREY SILTY CLAY 10.00m-11.50m BROWN MEDIUM COARSE SAND 11.50m-19.50m GREY & BROWN SILTY CLAY 19.50m-25.50m BROWN FINE CLAYEY SAND	0.00m-25.50m INNER LINING - CASESCRN = Not Known		0.00m-25.50m	26/08/1991	1563 m	North
119763	Groundwater Investigation	0.00m-0.50m LIGHT BROWN SANDY CLAY MOIST 0.50m-1.00m RED SILTY CLAY MOIST 1.00m-3.00m ORANGE AND BROWN SANDY CLAY MOIST 3.00m-4.00m BROWN SILTY CLAY MOIST 4.00m-10.00m SILTS AND SANDS MOIST	0.00m-7.00m INNER LINING - CASING = Pvc 7.00m-10.00m INNER LINING - SCREEN = Pvc	Date/time: 1994-12-06 0000 Quality: 47 WLMP: 3.12m DBNS: m RWL: mAHD		17/05/1994	1566 m	North West
3188	Groundwater Investigation	0.00m-6.50m SILTY CLAY MOIST 6.50m-11.00m SILTY SAND WET 11.00m-16.00m SAND WATER 16.00m-20.00m SILTY CLAY WET				25/11/1981	1571 m	South West
42824	Groundwater Investigation	11.00m-13.00m FINE GREY SAND 13.00m-16.00m FINE TO MED GREY SAND				25/11/1981	1571 m	South West
131447	Domestic, Stock	0.00m-3.00m BROWN SILTY CLAY 3.00m-7.00m BROWN SILTY FINE CLAYEY SAND 7.00m-10.00m BROWN FINE CLAYEY SAND 10.00m-13.50m BROWN & GREY SANDY CLAY 13.50m-0.00m BACKFILLED				02/05/1997	1577 m	North

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
WRK009647	Domestic & Stock	0.00m-0.50m BROWN SILTY CLAY 0.50m-10.00m BROWN MUD HEAVY CLAY 10.00m-14.50m BROWN SILTY CLAY 14.50m-15.50m BROWN FINE SANDY CLAY 15.50m-16.50m BROWN SILTY CLAY 16.50m-18.00m BROWN CLAY/FINE SAND 18.00m-22.00m BROWN MUD COARSE SAND				10/10/2003	1577 m	North East
WRK066200	Observation					21/09/2011	1608 m	North East
WRK066201	Observation					21/09/2011	1608 m	North East
WRK053359	Observation	0.00m-1.00m Brown Silty Clay 1.00m-5.00m Brown Silty Sandy Clay 5.00m-6.00m Brown Fine Sand 6.00m-13.50m Brown Silty sandy clay 13.50m-16.50m Brown Fine Sand 16.50m-17.50m Brown & Grey Silty Clay		Date/time: 2010-02-10 1400 Quality: 47 WLMP: 6.75m DBNS: m RWL: mAHD		29/01/2010	1627 m	South
WRK066202	Observation					21/09/2011	1634 m	North East
WRK066203	Observation					21/09/2011	1634 m	North East
WRK066204	Observation					21/09/2011	1634 m	North East
WRK066205	Observation					21/09/2011	1634 m	North East
3311	Groundwater Investigation	0.00m-0.50m RED BROWN SILTY CLAY DRY 1.00m-3.00m YELLOW BROWN SILTY CLAY DRY 3.00m-4.50m YELLOW BROWN WITH GREY SILTY CLAY DAMP 4.50m-7.00m RED BROWN SILTY CLAY WET 7.00m-9.00m YELLOW BROWN WITH GREY SILTY CLAY WET 9.00m-10.00m RED BROWN WITH GREY SILTY CLAY WET 10.00m-12.00m BROWN FINE SAND WATER 12.00m-14.50m RED BROWN WITH GREY SILTY CLAY WET 14.50m-18.50m YELLOW BROWN WITH GREY SILTY CLAY WET 18.50m-20.00m RED BROWN WITH GREY SILTY CLAY WET				17/07/1979	1636 m	North
42880	Groundwater Investigation					01/01/1950	1636 m	North
WRK090512	Investigation	0.00m-2.00m SANDAND GRAVEL GREY 2.00m-4.00m SILTY CLAY LIGHT BROWN 4.00m-5.00m SANDY SILTY CLAY 5.00m-7.00m SILTY CLAY LIGHT BROWN 7.00m-10.00m SILTY CLA GREY BROWN HIGH PLACTICITY	0.00m-6.80m INNER LINING - SCREEN = UPVC class 18 6.80m-9.80m INNER LINING - CASING = UPVC class 18 0.00m-4.30m OUTER LINING - GRAVEL = Cement 4.30m-6.30m OUTER LINING - GRAVEL = Bentonite 6.30m-9.80m OUTER LINING - GRAVEL = Seal			08/12/2015	1636 m	East
WRK090507	Investigation	0.00m-5.00m SILTy sand 5.00m-6.00m CLAYBROW AND GREY 6.00m-8.00m SILTY CLAY BROWN 8.00m-10.00m SANDY SILT BROWN SOME MINOR CLAY	0.00m-6.40m INNER LINING - CASING = UPVC class 18 6.40m-9.40m INNER LINING - SCREEN = UPVC class 18 0.00m-4.00m OUTER LINING - GRAVEL = Cement 4.00m-5.50m OUTER LINING - GRAVEL = Bentonite 5.50m-9.00m OUTER LINING - GRAVEL = Seal			08/12/2015	1639 m	East

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3328	Groundwater Investigation, Observation	0.00m-0.50m YELLOW BROWN CLAY MOIST 0.50m-1.00m YELLOW BROWN CLAY ORANGE INCLU DAMP 1.00m-2.00m YELLOW GREY CLAY DAMP 2.00m-2.50m YELLOWY GREY CLAY ORANGE INCLU MOIST 2.50m-3.00m GREY CLAY ORANGE INCLU MOIST 3.00m-4.00m YELLOW SILTY CLAY WET 4.00m-5.50m ORANGEY RED SILTY CLAY GREY INCLU DAMP 5.50m-6.50m ORANGEY BROWN SILTY CLAY GREY INCLU DA,[6.50m-7.00m YELLOWEY BROWN SILTY CLAY GREY INCLU MOIST 7.00m-7.50m YELLOWEY BROWN SANDY CLAY GREY INCLU MOIST 7.50m-8.00m YELLOW FINE CLAYEY SAND WET 8.00m-9.00m YELLOWEY ORANGE SILTY CLAY GREY INCLU MOIST 9.00m-10.50m YELLOWEY BROWN SILTY CLAY GREY INCLU MOIST 10.50m-14.50m YELLOWEY ORANGE SANDY CLAY GREY INCLU DAMP 14.50m-17.00m YELLOW CLAYEY SAND GREY INCLU WET 17.00m-17.50m GREY CLAY ORANGE INCLU MOIST 17.50m-18.00m ORANGE CLAY GREY INCLU MOIST		Date/time: 2013-07-22 1200 Quality: 47 WLMP: 5.06m DBNS: 4.91m RWL: 108.03 mAHD		04/08/1975	1651 m	South West
42888	Groundwater Investigation, Observation			Date/time: 1995-09-13 0000 Quality: 47 WLMP: 0.60m DBNS: 0.49m RWL: 111.90mAHD		04/08/1975	1651 m	South West
81179	Domestic	0.00m-1.50m BROWN SILTY CLAY 1.50m-9.00m GREY & BROWN SILTY CLAY 9.00m-10.00m GREY & BROWN SILTY SANDY CLAY 10.00m-12.00m BROWN FINE CLAYEY SAND	0.00m-10.00m INNER LINING - CASING = Not Known 10.00m-12.00m INNER LINING - SCREEN = Not Known		10.00m-12.00m	17/08/1991	1661 m	North
119751	Groundwater Investigation	0.00m-0.50m RED AND BROWN SILTY CLAY MOIST 0.50m-2.00m ORANGE BROWN SILTY CLAY MOIST 2.00m-4.00m BROWN SILTY CLAY MOIST 4.00m-10.50m SILTS AND SANDS MOIST 10.50m-12.00m MEDIUM SAND WET 12.00m-12.50m FINE SAND WET 12.50m-13.00m SILTY CLAY MOIST	0.00m-10.00m INNER LINING - CASING = Pvc 10.00m-13.00m INNER LINING - SCREEN = Pvc	Date/time: 1998-06-05 1400 Quality: 47 WLMP: 3.90m DBNS: m RWL: mAHD		24/03/1994	1662 m	South West
WRK006954	Irrigation	0.00m-1.50m RED CLAY 1.50m-7.20m SAND	0.00m-5.20m INNER LINING - CASING = Pvc Class 9 3.00m-7.20m INNER LINING - SCREEN = Pvc Class 9 5.20m-7.20m OUTER LINING - GRAVEL = Gravel		3.00m-7.20m	30/06/1992	1672 m	North West
WRK099839	Investigation	0.00m-0.00m	0.00m-4.50m OUTER LINING - GRAVEL = Cement 4.50m-5.50m OUTER LINING - GRAVEL = Bentonite 5.50m-12.00m OUTER LINING - GRAVEL = Gravel			20/04/2017	1679 m	North East
WRK099837	Investigation	0.00m-12.00m CLAY	0.00m-4.50m OUTER LINING - GRAVEL = Cement 4.50m-5.50m OUTER LINING - GRAVEL = Bentonite 5.50m-12.00m OUTER LINING - GRAVEL = Gravel			19/04/2017	1687 m	North East
WRK099838	Investigation	0.00m-12.00m CLAY	0.00m-4.50m OUTER LINING - GRAVEL = Cement 4.50m-5.50m OUTER LINING - GRAVEL = Bentonite 5.50m-12.00m OUTER LINING - GRAVEL = Gravel			19/04/2017	1690 m	North East

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
WRK080179	Observation	0.00m-0.40m FILL 0.40m-2.00m CLAYEY SILT BROWN 2.00m-2.50m CLAYEY SILTORANGE BROWN 2.50m-5.95m CLAYEY SILT ORANGE/BROWN/GREY 5.95m-10.00m SANDY CLAY BROWN	0.00m-6.00m INNER LINING - CASING = UPVC class 6 6.00m-10.00m INNER LINING - SCREEN = UPVC class 6 0.00m-4.00m OUTER LINING - GRAVEL = Cement 4.00m-5.00m OUTER LINING - GRAVEL = Bentonite 5.00m-10.00m OUTER LINING - GRAVEL = Gravel		6.00m-10.00m Clay	18/06/2014	1706 m	East
WRK080180	Observation	0.00m-0.80m FILL 0.80m-2.00m SILTY CLAY 2.00m-4.50m CLAYEY SILTY 4.50m-4.90m SILTY SAND 4.90m-6.90m SILTY SAND ORANGE BROWN 6.90m-10.00m SANDY CLAY	0.00m-6.00m INNER LINING - CASING = UPVC class 6 6.00m-10.00m INNER LINING - SCREEN = UPVC class 6 0.00m-4.00m OUTER LINING - GRAVEL = Cement 4.00m-5.00m OUTER LINING - GRAVEL = Bentonite 5.00m-10.00m OUTER LINING - GRAVEL = Gravel		6.00m-10.00m Clay	20/06/2014	1706 m	East
119652	Groundwater Investigation	0.00m-12.00m REFER TO DRILLERS LOG NUMBERED	0.00m-12.00m INNER LINING - CASING = Pvc 9.00m-12.00m INNER LINING - SCREEN = Pvc	Date/time: 1994-09-14 0000 Quality: 47 WLMP: 2.87m DBNS: m RWL: mAHD		18/04/1994	1717 m	North
119756	Groundwater Investigation	0.00m-1.00m BROWN AND RED SILTY CLAY MOIST 1.00m-2.50m BROWN SILTY CLAY MOIST 2.50m-4.00m BROWN CLAY SILT DAMP 4.00m-10.50m SILTS AND SANDS DAMP 10.50m-12.00m MEDIUM SAND WET 12.00m-20.00m SILTS AND SAND MOIST	0.00m-17.00m INNER LINING - CASING = Pvc 17.00m-20.00m INNER LINING - SCREEN = Pvc	Date/time: 2002-09-04 1400 Quality: 47 WLMP: 3.03m DBNS: m RWL: mAHD		18/04/1994	1717 m	North
3326	Groundwater Investigation	0.00m-0.50m DARK BROWN CLAY MOIST 0.50m-1.00m YELLOW CLAY GREY INCLU MOIST 1.00m-3.00m YELLOW BROWN CLAY MOIST 3.00m-4.00m YELLOW BROWN CLAY GREY INCLU MOIST 4.00m-5.00m BROWN CLAY MOIST 5.00m-5.50m ORANGEY BROWN CLAY MOIST 5.50m-6.00m ORANGEY BROWN CLAY GREY INCLU MOIST 6.00m-6.50m YELLOW CLAY GREY INCLU MOIST 6.50m-9.50m YELLOW SILTY CLAY MOIST 9.50m-12.50m YELLOW BROWN SILTY CLAY GREY INCLU MOIST 12.50m-13.00m ORANGEY SANDY CLAY GREY INCLU MOIST 13.00m-13.50m YELLOW CLAYEY FINE SAND WET 13.50m-14.50m YELLOW FINE SAND WET 14.50m-15.00m YELLOW GREY MED COARSE SAND WET 15.00m-16.00m ORANGEY BROWN CLAY GREY INCLU MOIST		Date/time: 2000-10-27 0000 Quality: 47 WLMP: 2.60m DBNS: m RWL: mAHD		17/07/1975	1718 m	South West
WRK053360	Observation	0.00m-1.00m Brown Silty Clay 1.00m-4.50m Brown Silty Sandy Clay 4.50m-8.00m Brown Fine Clayey sand 8.00m-11.00m Brown Fine sandy Clay 11.00m-17.00m Grey & Brown Med Fine sand 17.00m-17.50m Grey Fine Sandy clay		Date/time: 2010-02-10 1400 Quality: 47 WLMP: 8.20m DBNS: m RWL: mAHD		29/01/2010	1738 m	South East

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
3325	Groundwater Investigation, Observation	0.00m-0.50m RED BROWN CLAY MOIST 0.50m-1.00m BROWN CLAY MOIST 1.00m-2.00m YELLOW BROWN CLAY MOIST 2.00m-3.00m YELLOW SILTY CLAY MOIST 3.00m-5.00m RED BROWN SILTY CLAY MOIST 5.00m-5.50m YELLOW BROWN CLAY BLACK INCLU MOIST 5.50m-6.00m YELLOW BROWN SILTY CLAY MOIST 6.00m-7.50m YELLOW SILTY CLAY GREY INCLU MOIST 7.50m-8.00m ORANGEY YELLOW CLAY GREY INCLU MOIST 8.00m-10.50m YELLOW CLAY GREY INCLU MOIST 10.50m-11.50m ORANGEY YELLOW CLAY GREY INCLU MOIST 11.50m-13.00m ORANGEY YELLOW SILTY CLAY GREY INCLU DAMP 13.00m-15.50m YELLOW CLAYEY FINE SAND WET 15.50m-17.00m YELLOW FINE SAND WET 17.00m-17.50m BROWN CLAY GREY INCLU MOIST 17.50m-18.00m YELLOW BROWN CLAY GREY INCLU MOIST 18.00m-19.00m GREY CLAY YELLOW INCLU MOIST		Date/time: 2013-02-06 1200 Quality: 47 WLMP: 5.04m DBNS: 4.99m RWL: 107.83 mAHD		16/07/1975	1811 m	South West
42886	Groundwater Investigation, Observation			Date/time: 2013-02-06 1200 Quality: 47 WLMP: 1.94m DBNS: 1.74m RWL: 111.08mAHD		16/07/1975	1811 m	South West
WRK080181	Observation	0.00m-0.45m FILL 0.45m-0.90m SILTY CLAY ORANGE BROWN 0.90m-4.20m SILTY CLAY INCREASED SILT 4.20m-7.00m SANDY CLAY PALE BROWN 7.00m-10.00m SILTY SAND MED GRAIN PALE BROWN	0.00m-6.00m INNER LINING - CASING = UPVC class 6 6.00m-10.00m INNER LINING - SCREEN = UPVC class 6 0.00m-4.00m OUTER LINING - GRAVEL = Cement 4.00m-5.00m OUTER LINING - GRAVEL = Bentonite 5.00m-10.00m OUTER LINING - GRAVEL = Gravel		6.00m-10.00m Sand	20/06/2014	1821 m	East
81181	Domestic		0.00m-6.00m INNER LINING - CASING = Not Known 6.00m-11.00m INNER LINING - SCREEN = Not Known		6.00m-11.00m	31/08/1991	1822 m	North
81178	Domestic	0.00m-1.50m RED BROWN SILTY CLAY 1.50m-2.50m BROWN SILTY SANDY CLAY 2.50m-8.50m BROWN FINE SAND	0.00m-7.00m INNER LINING - CASING = Pvc 7.00m-8.50m INNER LINING - SCREEN = Pvc 6.00m-8.50m OUTER LINING - GRAVEL = Gravel		7.00m-8.50m Sand	07/09/1991	1841 m	North West
3018	Groundwater Investigation, Observation	0.00m-1.00m RED BROWN SILTY CLAY MOIST 1.00m-3.50m YELLOW BROWN SILTY CLAY MOIST 3.50m-4.00m YELLOW BROWN WITH GREY SILTY CLAY MOIST 4.00m-10.00m SILTY CLAY MOIST 10.00m-24.00m SILTY CLAY WET		Date/time: 1994-09-14 0000 Quality: 47 WLMP: 3.97m DBNS: m RWL: mAHD		09/08/1985	1873 m	South West
110150	Domestic	0.00m-1.50m BROWN SILTY CLAY 1.50m-7.00m GREY & BROWN SILTY CLAY 7.00m-9.00m GREY & BROWN SILTY SANDY CLAY 9.00m-11.00m GREY/BROWN FINE SANDY CLAY 11.00m-17.00m BROWN FINE SAND 17.00m-22.00m YELLOW/BROWN MEDIUM-COARSE SAND 22.00m-26.00m BROWN FINE SANDY CLAY 26.00m-30.00m GREY & BROWN SILTY CLAY	0.00m-11.00m INNER LINING - CASING = Not Known 11.00m-22.00m INNER LINING - SCREEN = Not Known		11.00m-22.00m	15/11/1991	1878 m	South

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
111450	Domestic & Stock	0.00m-1.00m RED BROWN SILTY SANDY CLAY 1.00m-2.00m GREY SILTY CLAY 2.00m-7.00m GREY & BROWN SILTY CLAY 7.00m-11.00m GREY & BROWN SILTY SANDY CLAY 11.00m-13.50m GREY & BROWN FINE CLAYEY SAND	0.00m-11.00m INNER LINING - CASING = Not Known 11.00m-13.50m INNER LINING - SCREEN = Not Known		11.00m-13.50m	08/11/1991	1878 m	South
WRK014107	Groundwater Investigation	0.00m-5.00m BROWN SILTY CLAY 5.00m-14.00m BROWN & GREY SILTY CLAY 14.00m-19.00m BROWN SILTY SANDY CLAY 19.00m-22.50m BROWN FINE CLAYEY SAND 22.50m-23.50m BROWN & GREY SILTY CLAY	0.30m-17.50m INNER LINING - CASING = Pvc	Date/time: 2008-03-11 1400 Quality: 47 WLMP: 23.50m DBNS: m RWL: mAHD	17.50m-23.50m Silt	28/02/2008	1891 m	South West
WRK090508	Investigation	0.00m-2.00m SANDy silt 2.00m-4.00m SILTY CLAY 4.00m-6.00m CLAYLIGHT RED BROWN 6.00m-8.00m CLAYBROWN GRAVEL 8.00m-9.00m SILTY SAND WITH MINOR CLAY 9.00m-10.00m FINE SAND BROWN	0.00m-6.50m INNER LINING - CASING = UPVC class 18 6.50m-9.00m INNER LINING - SCREEN = UPVC class 18 0.00m-4.00m OUTER LINING - GRAVEL = Cement 4.00m-5.90m OUTER LINING - GRAVEL = Bentonite 5.90m-9.50m OUTER LINING - GRAVEL = Seal			08/12/2015	1900 m	East
WRK090510	Investigation	0.00m-1.00m SILTY SANDY GRAVEL FILL 1.00m-3.00m CLAYLIGHT BROWN NATURAL 3.00m-5.00m SILTY CLAY LIGHT BROWN 5.00m-7.00m SILTY SAND LIGHT GREY BROWN 7.00m-10.00m COARSE SAND	0.00m-6.50m INNER LINING - CASING = UPVC class 18 6.50m-10.00m INNER LINING - SCREEN = UPVC class 18 0.00m-4.00m OUTER LINING - GRAVEL = Cement 4.00m-6.00m OUTER LINING - GRAVEL = Bentonite 6.00m-9.50m OUTER LINING - GRAVEL = Gravel			08/12/2015	1906 m	East
WRK090511	Investigation	0.00m-0.70m GRAVELy fill 0.70m-2.00m STILL NATURAL CLAY BROWN 2.00m-6.00m SILTY CLAY BROWN 6.00m-10.00m SILTY CLAY LIGHT BROWN	0.00m-6.40m INNER LINING - CASING = UPVC class 18 6.40m-9.40m INNER LINING - SCREEN = UPVC class 18 0.00m-0.00m OUTER LINING - GRAVEL = Not Known			08/12/2015	1911 m	East
116071	Groundwater Investigation	0.00m-0.50m DARK BROWN SANDY CLAY MOIST 0.50m-4.00m BROWN SILTY CLAY MOIST 4.00m-15.50m SILTY CLAY MOIST 15.50m-16.50m FINE TO MEDIUM SAND WET 16.50m-18.50m COARSE SAND WET 18.50m-19.00m SILTY CLAY MOIST	0.00m-16.00m INNER LINING - CASING = Pvc 0.00m-19.00m INNER LINING - CASING = Not Known 16.00m-19.00m INNER LINING - SCREEN = Pvc	Date/time: 1994-12-06 0000 Quality: 47 WLMP: 4.54m DBNS: m RWL: mAHD		07/03/1994	1938 m	West
3353	Groundwater Investigation, Observation	0.00m-0.50m RED S/C DRY 0.50m-1.00m BROWN S/C DAMP 1.00m-1.50m YELLOW S/C DAMP 2.00m-7.50m BROWN MED SAND WATER 8.00m-14.50m YELLOW MED SAND (DIRTY) WATER 14.50m-18.00m WHITE GRAVELS COARSE MED SAND WATER 18.00m-18.50m BROWN GREY CLAY NO WATER		Date/time: 2000-10-10 0000 Quality: 47 WLMP: 7.14m DBNS: 6.76m RWL: 106.35 mAHD		02/04/1975	1949 m	West
42901	Groundwater Investigation, Observation			Date/time: 1986-01-14 0000 Quality: 47 WLMP: 1.00m DBNS: 0.77m RWL: 112.34 mAHD		01/01/1950	1949 m	West
WRK016327	Groundwater Investigation	0.00m-4.00m brown silty clay 4.00m-7.00m brown & grey silty clay 7.00m-10.00m brown silty sandy clay 10.00m-15.00m brown med coarse sand & fine gravel	0.30m-10.00m INNER LINING - CASING = Pvc Class 9			25/03/2009	1950 m	North West
81166	Domestic, Stock	0.00m-1.00m RED BROWN SILTY CLAY 1.00m-5.50m BROWN SILTY CLAY 5.50m-13.00m BROWN & GREY SILTY CLAY 13.00m-17.00m GREY SILTY CLAY 17.00m-18.50m GREY BROWN MEDIUM COARSE SAND	0.00m-17.00m INNER LINING - CASING = Pvc 17.00m-18.50m INNER LINING - SCREEN = Pvc		17.00m-18.50m Clay	05/09/1990	1954 m	West

Bore Id	Use Type	Drillers Log	Construction	Latest Water Levels	Geology	Completed Date	Dist (m)	Dir
WRK090509	Investigation	0.00m-1.00m ROCK BRICK 1.00m-3.00m STIFF CLAY BROWN 3.00m-6.00m SILTY CLAY BROWN 6.00m-10.00m SILTY SANDY CLAY GREY/BROWN	0.00m-7.00m INNER LINING - CASING = UPVC class 18 0.00m-4.50m OUTER LINING - GRAVEL = Cement 4.50m-6.50m OUTER LINING - GRAVEL = Bentonite 6.50m-10.00m OUTER LINING - GRAVEL = Seal			08/12/2015	1982 m	East
WRK014104	Groundwater Investigation	0.00m-8.50m BROWN MED HEAVY CLAY 8.50m-13.00m BROWN & GREY SILTY SANDY CLAY 13.00m-18.00m BROWN MED FINE SAND 18.00m-19.00m BROWN & GREY SILTY CLAY	0.30m-13.00m INNER LINING - CASING = Pvc	Date/time: 2008-03-11 1400 Quality: 47 WLMP: 19.00m DBNS: m RWL: mAHD	13.00m-19.00m Sand	29/02/2008	1996 m	South West
3354	Groundwater Investigation, Observation	0.00m-0.50m RED BROWN S/C DRY 0.50m-1.00m BROWN S/C DRY 1.50m-3.50m GREY BROWN CLAY DAMP 4.00m-4.50m GREY YELLOW CLAY DAMP 5.00m-6.50m GREY BROWN S/C DAMP 6.50m-7.00m GREY BROWN CLAY DAMP 7.00m-7.50m BROWN GREY S/C DAMP 8.00m-9.00m GREY YELLOW S/C DAMP 9.50m-10.50m GREY BROWN S/C DAMP 11.00m-12.00m BROWN GREY S/C DAMP 12.00m-12.50m GREY S/C WET 12.50m-13.00m GREY BROWN S/C WET 13.00m-13.50m GREY S/C WET 13.50m-14.00m BROWN CLAY GRAVELS WET 14.00m-14.50m YELLOW C/S WET 14.50m-15.00m GREY BROWN CLAY WET		Date/time: 2000-10-10 0000 Quality: 47 WLMP: 11.62m DBNS: 11.33m RWL: 100.96 mAHD		04/04/1975	1998 m	West
42902	Groundwater Investigation, Observation			Date/time: 1980-05-09 0000 Quality: 47 WLMP: 0.98m DBNS: 0.57m RWL: 111.72mAHD		01/01/1950	1998 m	West

Groundwater Boreholes

294 McLennan Street, Mooroopna, VIC 3629

Boreholes (Earth Resources Database)

Boreholes from the Earth Resources dataset, within the dataset buffer:

Bore Id	Bore Type	Company	Usage	Method	Status	Drill Date	Depth	Elevation	Accuracy (m)	Dist (m)	Dir
3321		Rural Water Commission	Groundwater Investigation			01/01/1950		112.35	300	624m	South West
42883		Rural Water Commission	Groundwater Investigation			01/01/1950		112.35	300	624m	South West
3315		Rural Water Commission	Groundwater Investigation			01/01/1950		112.04	300	668m	North West
42882		Rural Water Commission	Groundwater Investigation			01/01/1950		112.04	300	668m	North West
3337		Rural Water Commission	Groundwater Investigation			01/01/1950			300	777m	South West
3329		Rural Water Commission	Groundwater Investigation			01/01/1950			300	779m	South West
3322		Rural Water Commission	Groundwater Investigation			01/01/1950		112.49	300	821m	South West
42884		Rural Water Commission	Groundwater Investigation			01/01/1950		112.49	300	821m	South West
3330		Rural Water Commission	Groundwater Investigation			01/01/1950			300	874m	South West
3314		Rural Water Commission	Groundwater Investigation			01/01/1950		111.96	300	911m	North West
42881		Rural Water Commission	Groundwater Investigation			01/01/1950		111.96	300	911m	North West
2323		Rural Water Commission	Groundwater Investigation			01/01/1950		115.71	300	977m	South West
42600		Rural Water Commission	Groundwater Investigation			01/01/1950		115.71	300	977m	South West
3331		Rural Water Commission	Groundwater Investigation			01/01/1950		112.37	300	1031 m	South West
42889		Rural Water Commission	Groundwater Investigation			01/01/1950		112.37	300	1031 m	South West
3339		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1042 m	South West
3922		Rural Water Commission	Groundwater Investigation			01/01/1950		112.59	300	1051 m	South East
43083		Rural Water Commission	Groundwater Investigation			01/01/1950		112.59	300	1051 m	South East
3147		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1180 m	South West
3338		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1181 m	South West
3332		Rural Water Commission	Groundwater Investigation			01/01/1950		112.54	300	1204 m	South
42890		Rural Water Commission	Groundwater Investigation			01/01/1950		112.54	300	1204 m	South
3324		Rural Water Commission	Groundwater Investigation			01/01/1950		112.24	300	1208 m	South West
42885		Rural Water Commission	Groundwater Investigation			01/01/1950		112.24	300	1208 m	South West
42917		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1242 m	South West
95816		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1242 m	South West
3182		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1291 m	South West
42919		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1325 m	South West

Bore Id	Bore Type	Company	Usage	Method	Status	Drill Date	Depth	Elevation	Accuracy (m)	Dist (m)	Dir
95817		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1325 m	South West
3178		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1366 m	South West
3184		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1401 m	South West
3921		Rural Water Commission	Groundwater Investigation			01/01/1950		111.56	300	1402 m	South East
43082		Rural Water Commission	Groundwater Investigation			01/01/1950		111.56	300	1402 m	South East
3923		Rural Water Commission	Groundwater Investigation			01/01/1950		112.85	300	1421 m	South East
42822		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1436 m	South West
95813		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1436 m	South West
3924		Rural Water Commission	Groundwater Investigation			01/01/1950		112.85	300	1464 m	South East
3186		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1469 m	South West
3188		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1571 m	South West
42824		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1571 m	South West
3311		Rural Water Commission	Groundwater Investigation			01/01/1950		111.18	300	1637 m	North
42880		Rural Water Commission	Groundwater Investigation			01/01/1950		111.18	300	1637 m	North
3328		Rural Water Commission	Groundwater Investigation			01/01/1950		112.39	300	1651 m	South West
42888		Rural Water Commission	Groundwater Investigation			01/01/1950		112.39	300	1651 m	South West
3326		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1717 m	South West
3325		Rural Water Commission	Groundwater Investigation			01/01/1950		112.38	300	1811 m	South West
42886		Rural Water Commission	Groundwater Investigation			01/01/1950		112.38	300	1811 m	South West
3018		Rural Water Commission	Groundwater Investigation			01/01/1950			300	1873 m	South West
3353		Rural Water Commission	Groundwater Investigation			01/01/1950		113.11	300	1950 m	West
42901		Rural Water Commission	Groundwater Investigation			01/01/1950		113.11	300	1950 m	West
3354		Rural Water Commission	Groundwater Investigation			01/01/1950		112.29	300	1999 m	West
42902		Rural Water Commission	Groundwater Investigation			01/01/1950		112.29	300	1999 m	West

Boreholes (Federation University)

Boreholes from the Federation University Australia dataset, within the dataset buffer:

Bore Id	Authority	Type	Uses	Initial TD	Log	Dist (m)	Dir
N/A	No records in buffer						

Historical Mining Activity - Shafts

294 McLennan Street, Mooroopna, VIC 3629

Historical Mining Activity - Shafts

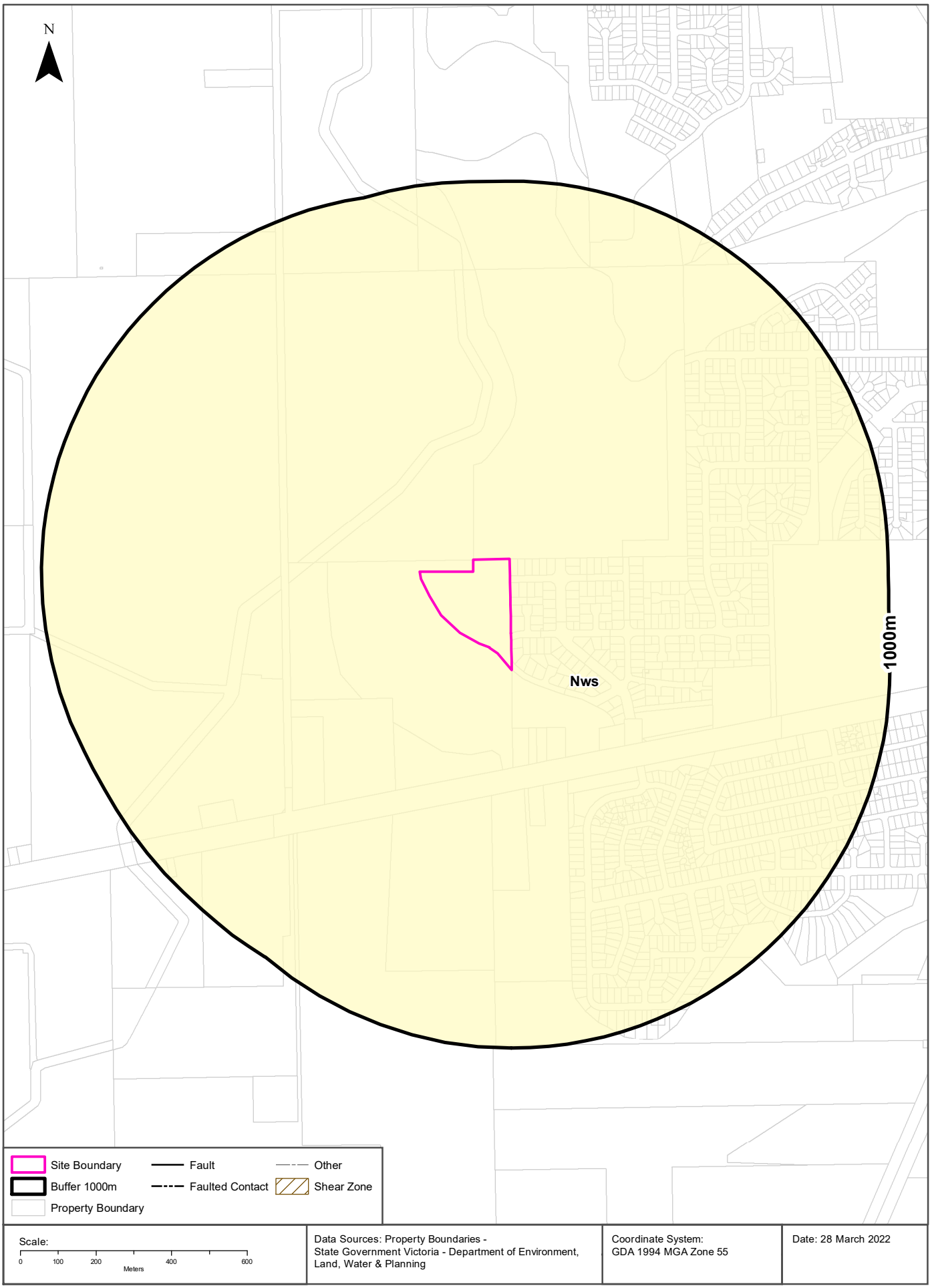
Mine Shaft Locations were collected by a variety of methods from 1869 in some areas of the state, mainly concentrating in Ballarat and Bendigo. In places a shaft may be recorded multiple times with a different source. In cases where several shaft locations are shown close together (generally with separations less than stated position errors) and they have different sources, it is possible that one shaft has been mapped several times. In cases where several shaft locations are shown close together but they have the same information source, it is possible that each shaft location represents a different shaft on the ground.

Historical Mine Shafts within the dataset buffer:

Map Id	Name	Source	Depth (m)	Collar (ft)	Fill/Cap Method	Location Desc	Location Accuracy	Distance	Direction
N/A	No records in buffer								

Geology

294 McLennan Street, Mooroopna, VIC 3629



Geology

294 McLennan Street, Mooroopna, VIC 3629

Geological Units 1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Name	Description	Geological Age	Lithology	Distance	Direction
Nws	Shepparton Formation (Nws): generic	Clay, sand, silt, pooly-sorted lenticular gravel. Dissected flood plain alluvium: terraces 1-10 metres above present river channels; well developed soil 2-3 m thick.	Pliocene to Holocene	clay lithology (dominant); sand (significant); silt material (significant); gravel material (significant)	0m	On-site

Geology

294 McLennan Street, Mooroopna, VIC 3629

Geological Structures 1:250,000

What are the Geological Faults or Faulted Contacts within the dataset buffer?

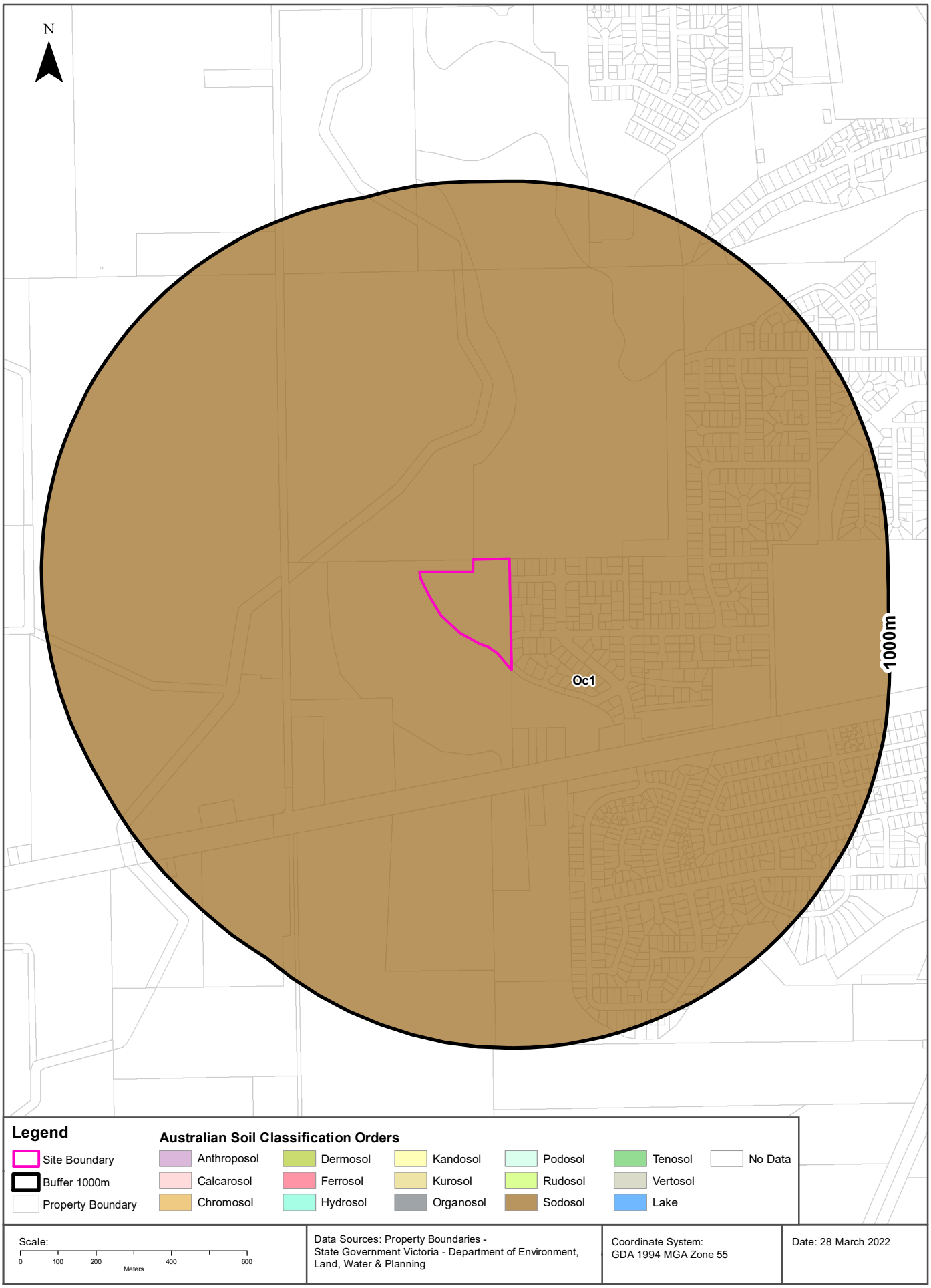
Map Id	Type	Name	Contact	Positional Accuracy	Distance	Direction
N/A	No records in buffer					

What are the Shear Zones within the dataset buffer?

Map Id	Type	Name	Description	Positional Accuracy	Distance	Direction
N/A	No records in buffer					

Atlas of Australian Soils

294 McLennan Street, Mooroopna, VIC 3629



Soils

294 McLennan Street, Mooroopna, VIC 3629

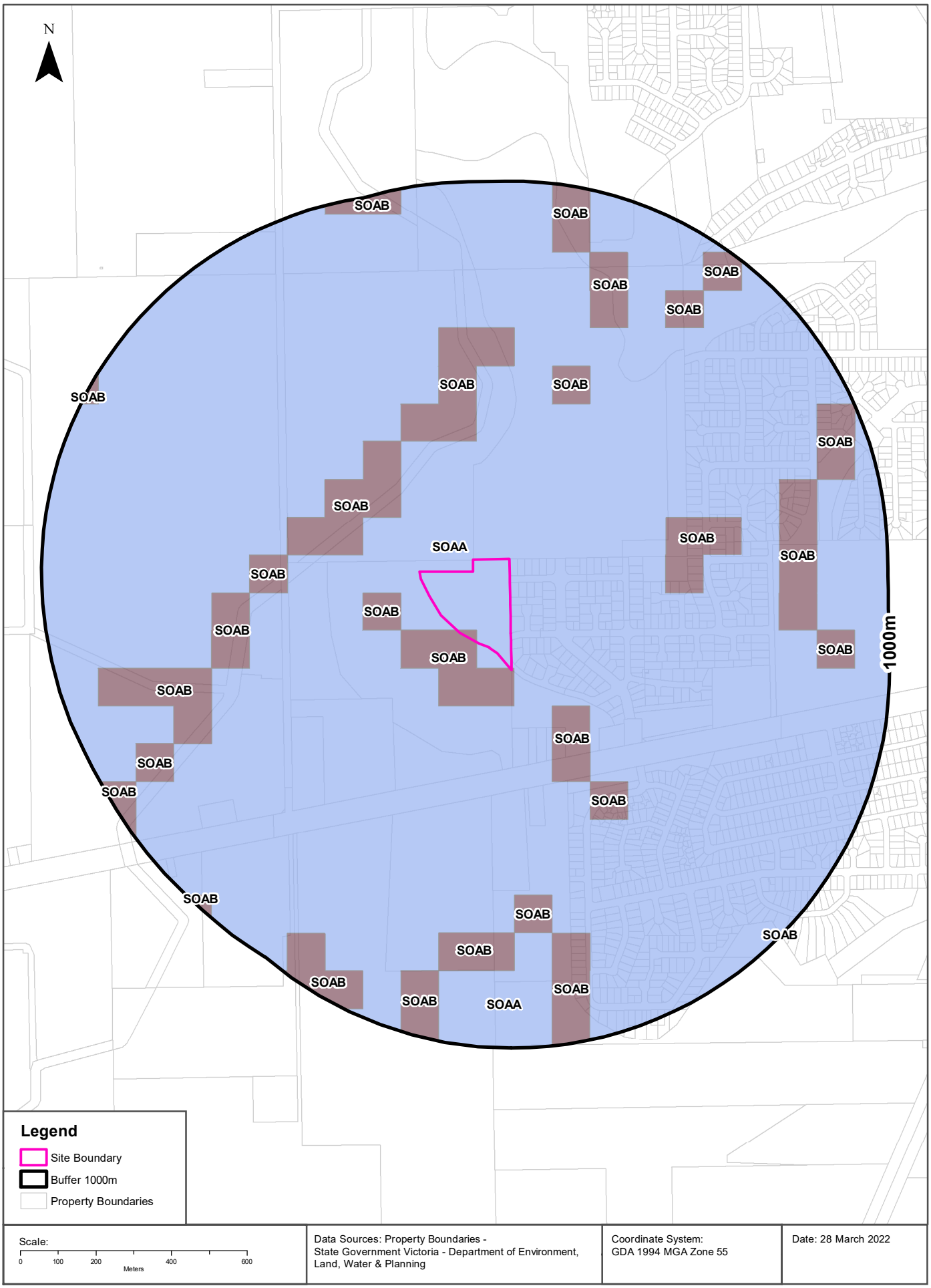
Atlas of Australian Soils

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

Map Unit Code	Soil Order	Map Unit Description	Distance	Direction
Oc1	Sodosol	The following replaces the brief description given for unit P1 on Sheet 1; Oc1 being the new symbol replacing P1. Plains with low sandhills, prior streams, depressions, swamps, and stream valleys. Layered soil materials bow the sola of present day soils are important factors in soil variability owing to their influence on drainage characteristics. The detailed soil pattern is complex: (I) the relatively higher, better-drained portions of the plains have hard alkaline red soils (Dr2.23 and Dr2.33) and smaller areas of other soils including (Dr2.12) and (Dr3.23); (2) the relatively inter- mediate portions of the plain have (Dr2.33) in association with hard alkaline brown soils (Db1.43) and gilgai puffs of cracking clays (Ug5.2(3)) in some places, small areas of other soils include (Dr2.43) and (Dr3.43); (3) the relatively lower portions of the plains, depressions, and swampy areas have hard alkaline yellow mottled soils (Dy3.43 and Dy3.33) in association with cracking clays (Ug5.2), often in gilgai formation; (4) low sandhills have deep sandy neutral red mottled soils (Dr5.62) and (Uc) soils; (5) prior streams have very variable "well-drained soils" in the stream bed, and (Dr2.23, Dr2.33, and Dr2.43) on their levees which merge with the higher portions of the plain; (6) stream valleys have floodplains of (Dy3.4) and (Gn) soils.	0m	On-site

Victorian Soil Type Mapping

294 McLennan Street, Mooroopna, VIC 3629



Soils

294 McLennan Street, Mooroopna, VIC 3629

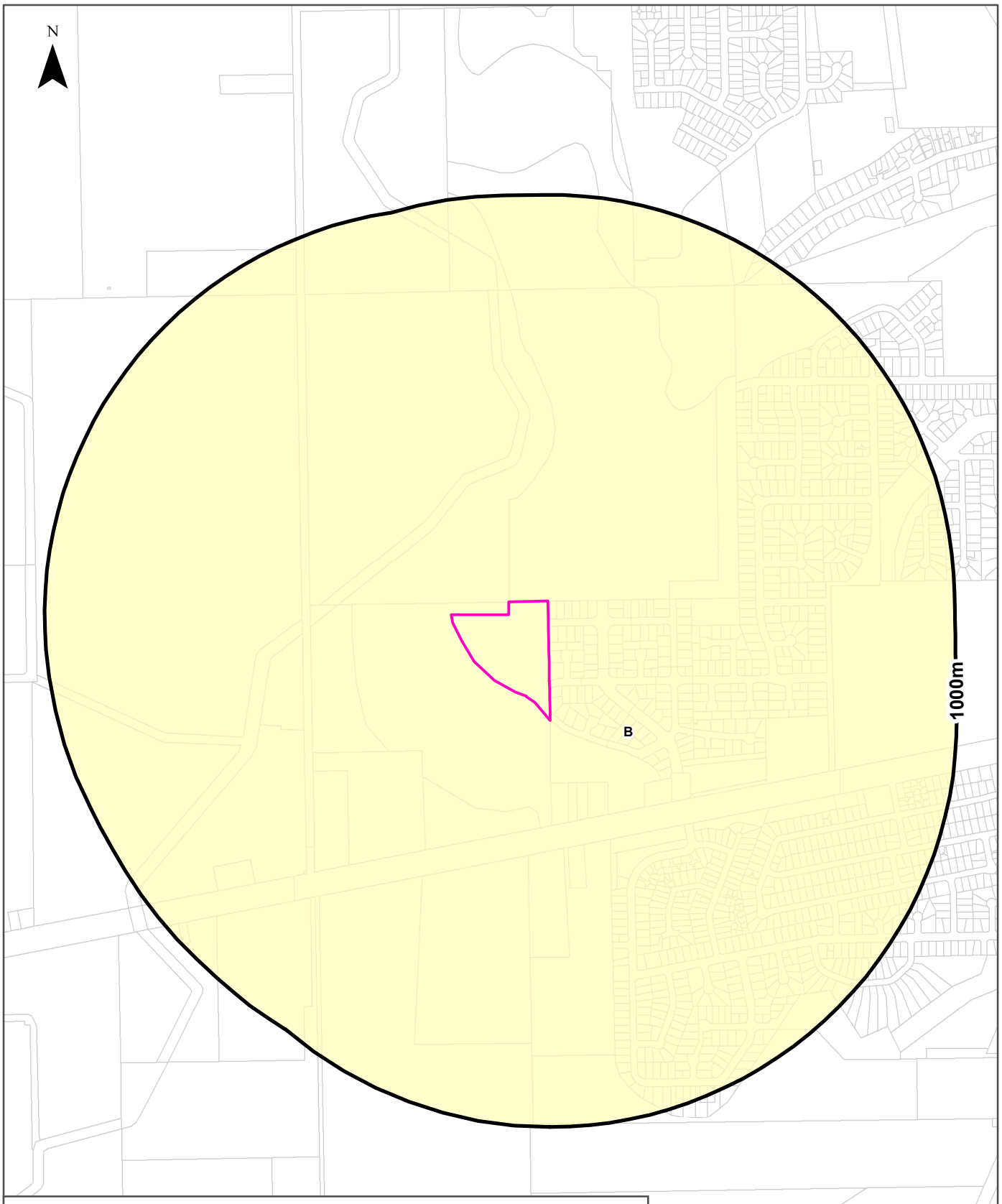
Victorian Soil Type Mapping

Victorian Soil Types within the dataset buffer:

Symbol	Description	Distance	Direction
SOAA	Red Sodosols	0m	On-site
SOAB	Brown Sodosols	0m	On-site

Atlas of Australian Acid Sulfate Soils

294 McLennan Street, Mooroopna, VIC 3629



Legend

Site Boundary

Buffer 1000m

Property Boundary

Probability of occurrence of Acid Sulfate Soils

A. High (>70%)

B. Low (6-70%)

C. Extremely Low (1-5%)

D. No Chance (0%)

No Data

Scale: 0 100 200 400 600 Meters

Data Sources: Property Boundaries & Topographic Data: State of Victoria - Department of Environment and Primary Industries

Coordinate System: GDA 1994 MGA Zone 55

Date: 28 March 2022

Acid Sulfate Soils

294 McLennan Street, Mooroopna, VIC 3629

Atlas of Australian Acid Sulfate Soils

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

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

Acid Sulfate Soils

294 McLennan Street, Mooroopna, VIC 3629

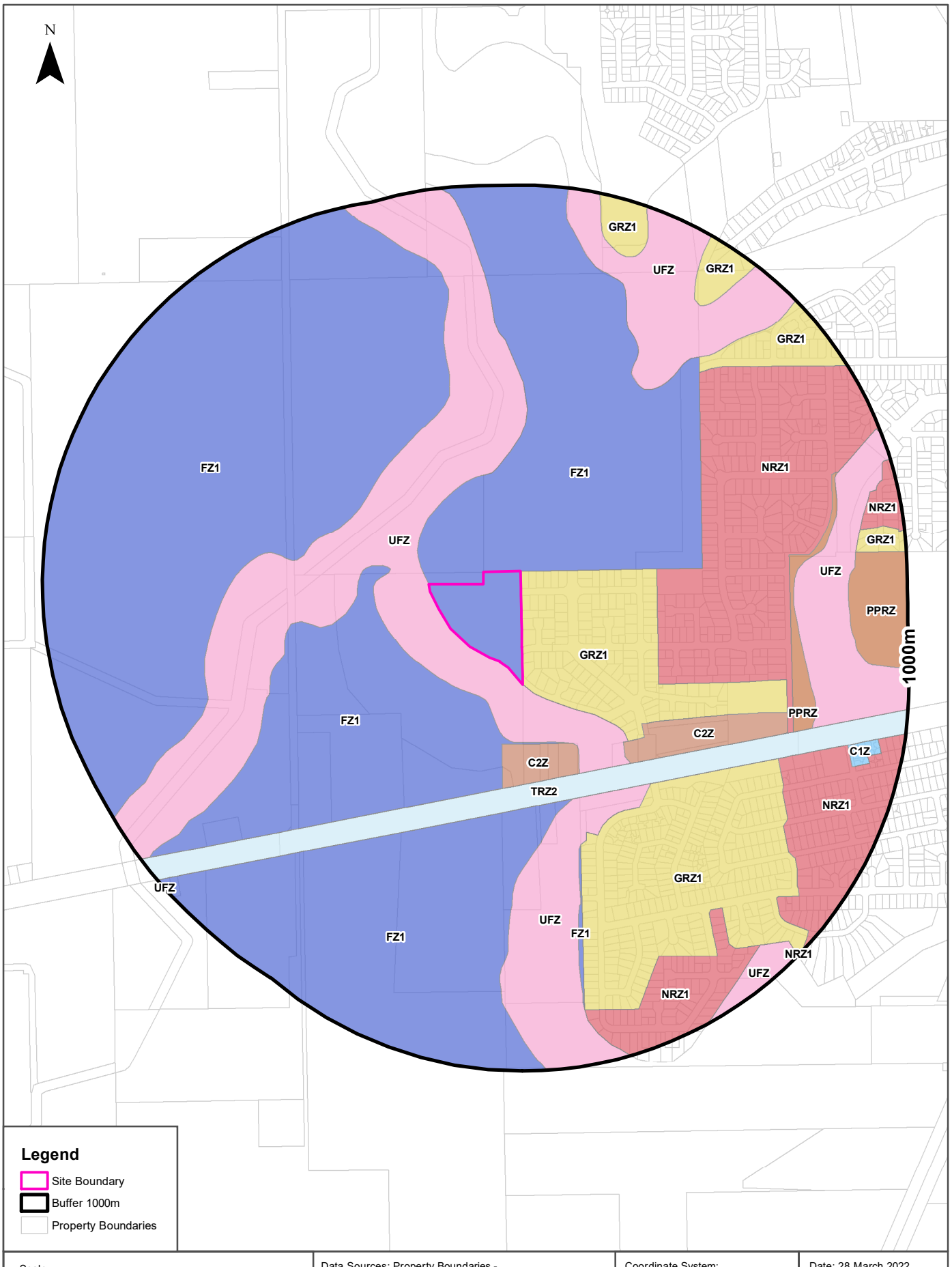
Coastal Acid Sulfate Soils

Coastal Acid Sulfate Soil types within the dataset buffer:

Coastal Acid Sulfate Soil Types	Distance	Direction
No records in buffer		

Planning Zones

294 McLennan Street, Mooroopna, VIC 3629



Planning

294 McLennan Street, Mooroopna, VIC 3629

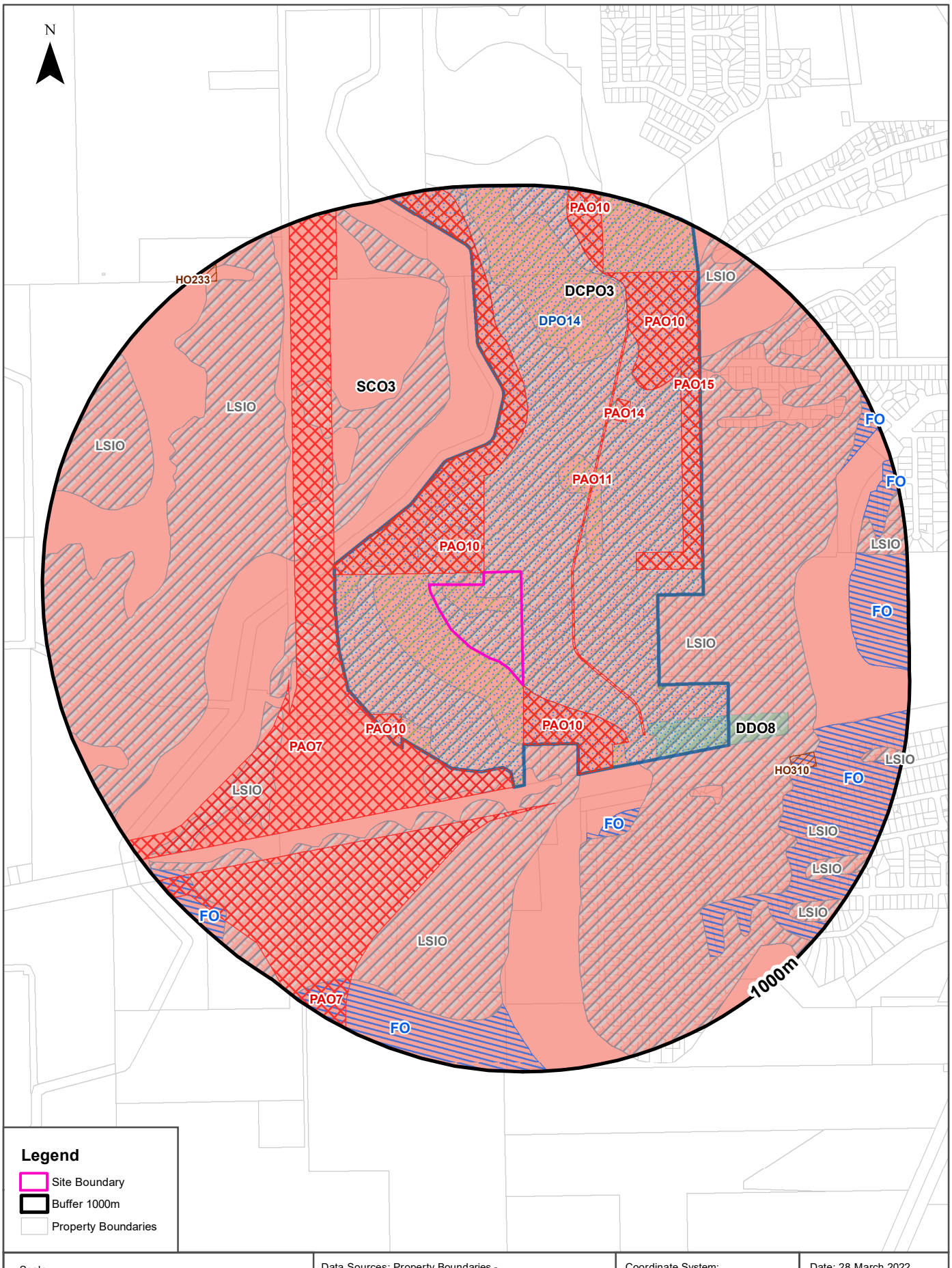
Planning Zones

Planning zones within the dataset buffer:

Zone Code	Description	Distance	Direction
FZ1	FARMING ZONE - SCHEDULE 1	0m	On-site
UFZ	URBAN FLOODWAY ZONE	0m	North
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	0m	East
FZ1	FARMING ZONE - SCHEDULE 1	100m	South West
C2Z	COMMERCIAL 2 ZONE	153m	South
TRZ2	TRANSPORT ZONE 2 - PRINCIPAL ROAD NETWORK	253m	South
FZ1	FARMING ZONE - SCHEDULE 1	265m	North West
C2Z	COMMERCIAL 2 ZONE	298m	South East
FZ1	FARMING ZONE - SCHEDULE 1	314m	South
UFZ	URBAN FLOODWAY ZONE	321m	South
NRZ1	NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 1	351m	East
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	410m	South East
FZ1	FARMING ZONE - SCHEDULE 1	438m	South
NRZ1	NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 1	686m	South East
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	691m	North East
PPRZ	PUBLIC PARK AND RECREATION ZONE	694m	East
NRZ1	NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 1	759m	South East
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	830m	North East
PPRZ	PUBLIC PARK AND RECREATION ZONE	846m	East
C1Z	COMMERCIAL 1 ZONE	854m	East
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	859m	North
GRZ1	GENERAL RESIDENTIAL ZONE - SCHEDULE 1	866m	East
NRZ1	NEIGHBOURHOOD RESIDENTIAL ZONE - SCHEDULE 1	883m	East
UFZ	URBAN FLOODWAY ZONE	998m	South West

Planning Overlays

294 McLennan Street, Mooroopna, VIC 3629



Planning

294 McLennan Street, Mooroopna, VIC 3629

Planning Overlays

Planning overlays within the dataset buffer:

Zone Code	Description	Distance	Direction
DCPO3	DEVELOPMENT CONTRIBUTIONS PLAN OVERLAY - SCHEDULE 3	0m	On-site
DPO14	DEVELOPMENT PLAN OVERLAY - SCHEDULE 14	0m	On-site
SCO3	SPECIFIC CONTROLS OVERLAY - SCHEDULE 3	0m	On-site
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	0m	On-site
PAO10	PUBLIC ACQUISITION OVERLAY 10	0m	South East
PAO10	PUBLIC ACQUISITION OVERLAY 10	0m	North
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	100m	South
PAO11	PUBLIC ACQUISITION OVERLAY 11	128m	North East
PAO7	PUBLIC ACQUISITION OVERLAY 7	219m	West
PAO10	PUBLIC ACQUISITION OVERLAY 10	248m	South West
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	265m	West
PAO15	PUBLIC ACQUISITION OVERLAY 15	297m	North East
PAO7	PUBLIC ACQUISITION OVERLAY 7	314m	South West
DDO8	DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 8	335m	South East
FO	FLOODWAY OVERLAY	411m	South East
PAO14	PUBLIC ACQUISITION OVERLAY 14	461m	North East
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	484m	South West
PAO10	PUBLIC ACQUISITION OVERLAY 10	570m	North East
HO310	HERITAGE OVERLAY (HO310)	712m	South East
FO	FLOODWAY OVERLAY	716m	South East
FO	FLOODWAY OVERLAY	824m	South
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	824m	South East
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	830m	North East
FO	FLOODWAY OVERLAY	846m	East
FO	FLOODWAY OVERLAY	852m	North East
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	866m	East
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	870m	South East
FO	FLOODWAY OVERLAY	891m	East
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	892m	East
LSIO	LAND SUBJECT TO INUNDATION OVERLAY	896m	South East
HO233	HERITAGE OVERLAY (HO233)	959m	North West

Heritage

294 McLennan Street, Mooroopna, VIC 3629

Commonwealth Heritage List

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

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

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

National Heritage List

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

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

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

Victorian Heritage Register

What are the Victorian Heritage Register items located within the dataset buffer?:

VHR Number	Description	Distance	Direction
N/A	No records in buffer		

Victorian Heritage Register Data Custodian: State Government Victoria - Dept of Environment, Land, Water & Planning

Cultural Heritage Sensitivity

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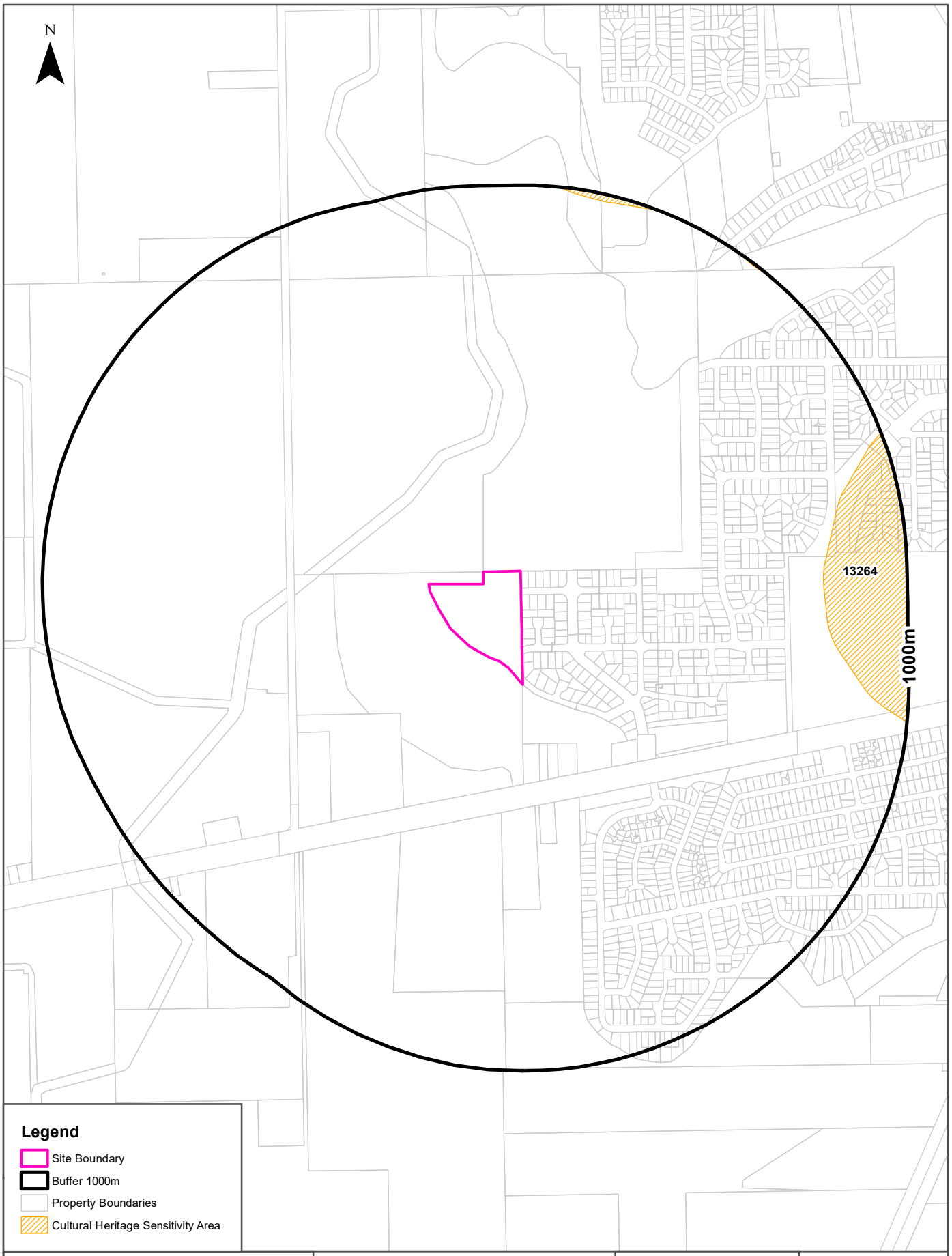

Heritage

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Cultural Heritage Sensitivity

Areas of Cultural Heritage Sensitivity as specified in Division 3 of Part 2 in the Victorian Aboriginal Heritage Regulations 2018, within the dataset buffer:

Map Id	Distance	Direction
13264	783m	East

Natural Hazards

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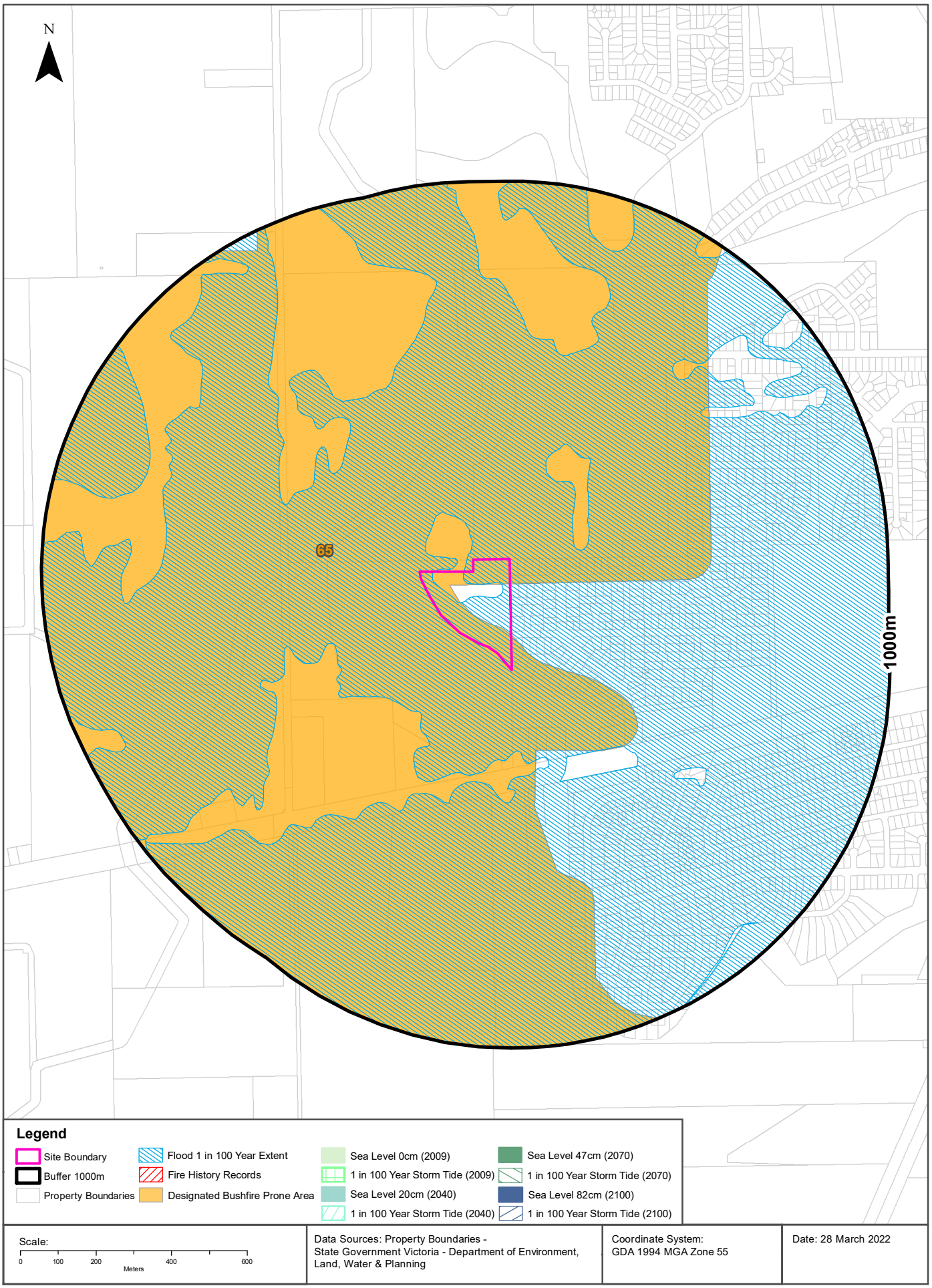

Natural Hazards

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Bushfire Prone Areas

What are the designated bushfire prone areas within the dataset buffer?

Map ID	Feature	Plan No	LGA	Gazetted Date	Distance	Direction
65	Designated Bushfire Prone Area	LEGL./20-291	GREATER SHEPPARTON	07/09/2020	0m	On-site

Fire History

What are the fire history records of fires primarily on public land, within the dataset buffer?

Map Id	Fire Type	Fire Key	Season	Fire No	Fire Name	Treatment	Fire Cover	Start Date	Dist (m)	Direction
N/A	No records in buffer									

Flood - 1 in 100 year modelled flood extent

What 1 in 100 year flood extent features exist within the dataset buffer?

Feature	Source	Method	Scale	Modified Date	Distance	Direction
100 Year Flood Outline	Dept. Planning	Sourced from planning scheme spatial data		01/12/2008	0m	On-site

Natural Hazards

294 McLennan Street, Mooroopna, VIC 3629

Victorian Coastal Inundation Sea Level Rise

What coastal inundation sea level rise features exist within the dataset buffer?

Description	Distance	Direction
No records in buffer		

Ecological Constraints - Native Vegetation 2005 & Ramsar Wetlands

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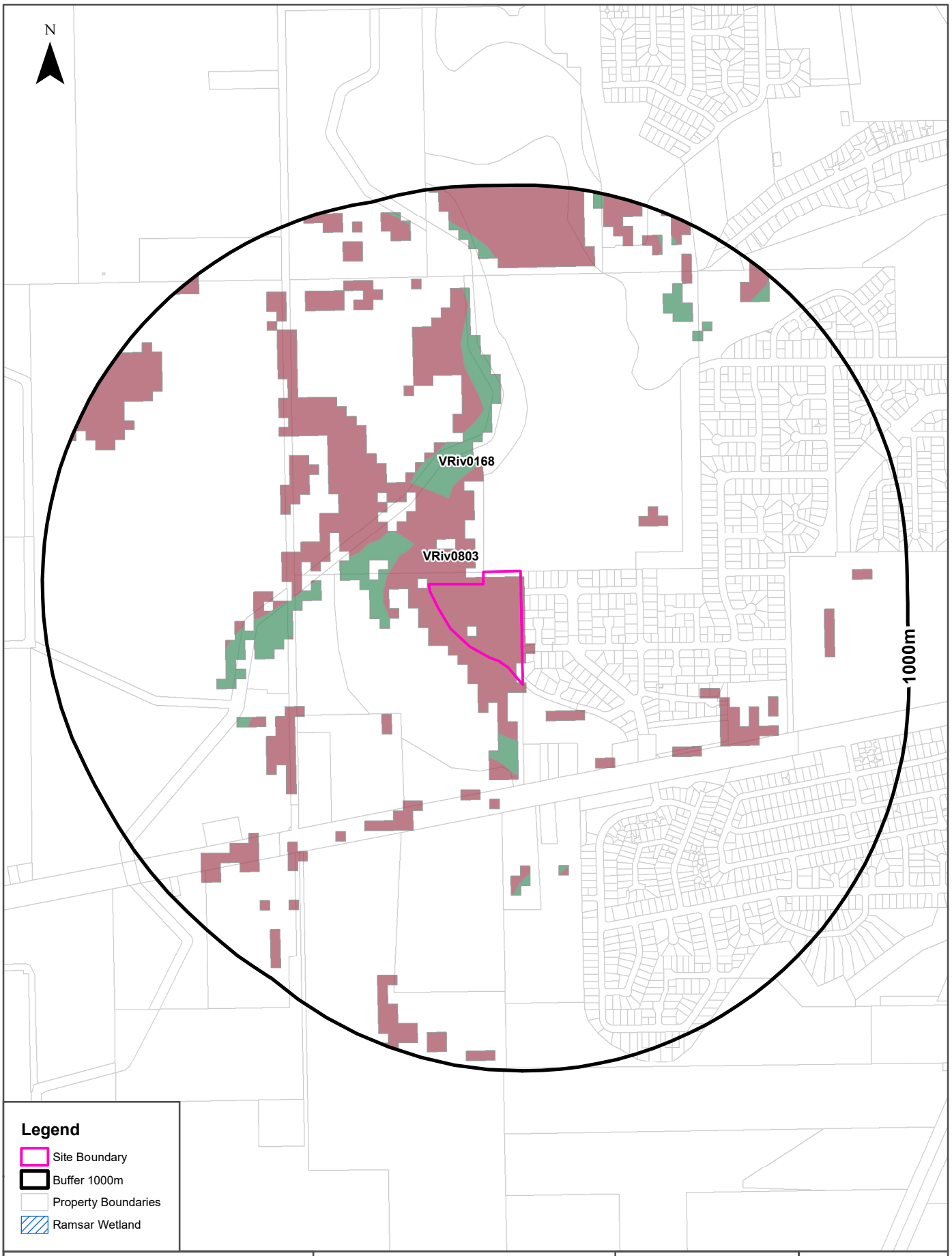

Ecological Constraints

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Native Vegetation (Modelled 2005 Ecological Vegetation Classes)

What native vegetation exists within the dataset buffer?

Veg Code	EVC Name	EVCCode	Group	Subgroup	Bioregion	Conservation Status	Geographic Occurance	Dist	Dir
VRiv0803	Plains Woodland	0803	Plains Woodlands or Forests	Poorly-draining	Victorian Riverina	Endangered	Common	0m	On-site
VRiv0168	Drainage-line Aggregate	0168	Riverine Grassy Woodlands or Forests	Creekline and/or swampy	Victorian Riverina	Endangered	Naturally Restricted	102m	North West

Ramsar Wetlands

What Ramsar wetland areas exist within the dataset buffer?

Map ID	Site Name	Lake Name	Distance	Direction
N/A	No records in buffer			

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

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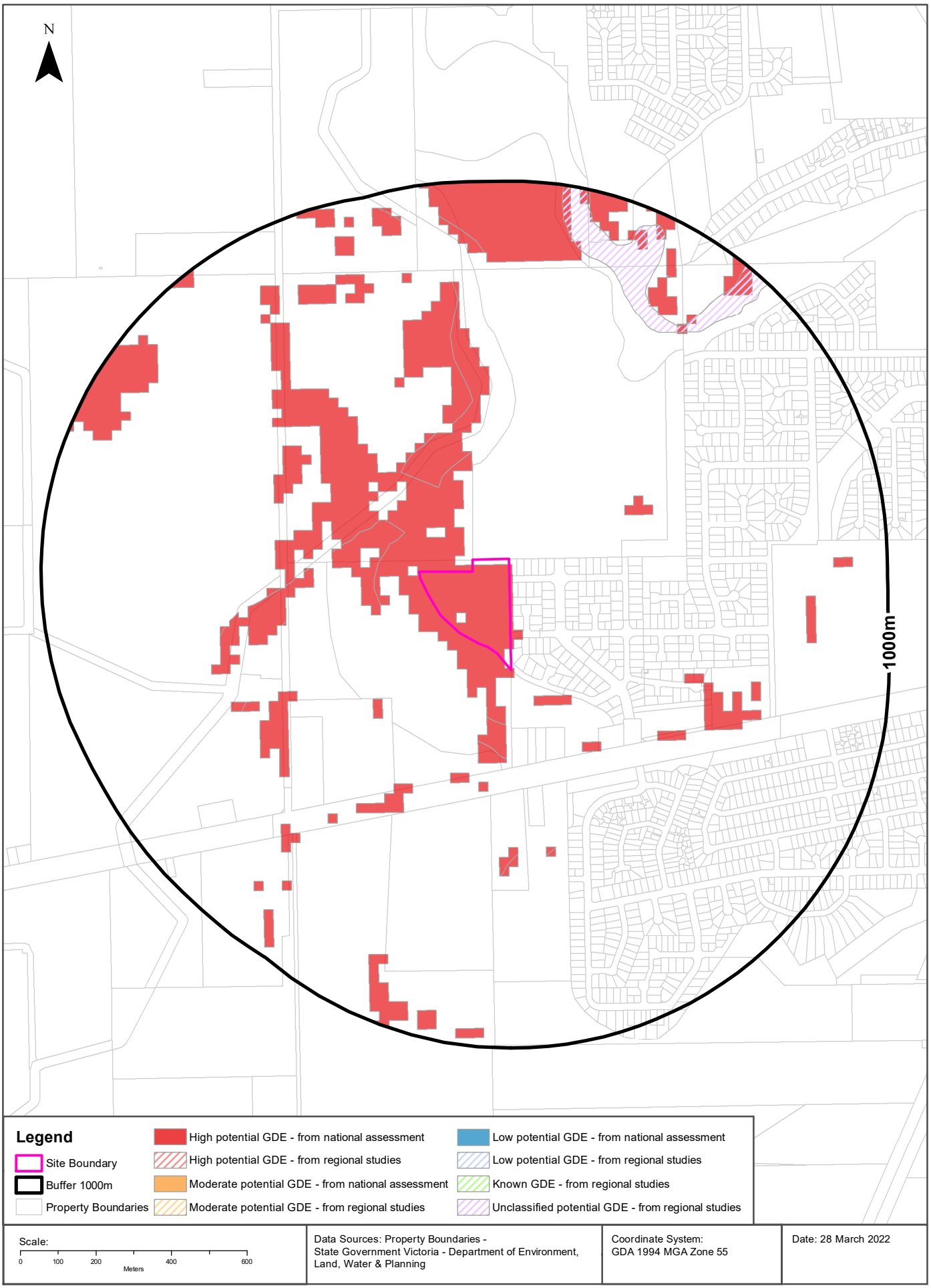

Ecological Constraints

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Groundwater Dependent Ecosystems Atlas

Type	Name	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial		High potential GDE - from national assessment	Alluvial plain.	Vegetation		0m	On-site
Aquatic		Unclassified potential GDE - from regional studies	Alluvial plain.	Wetland		715m	North East

Inflow Dependent Ecosystems Likelihood

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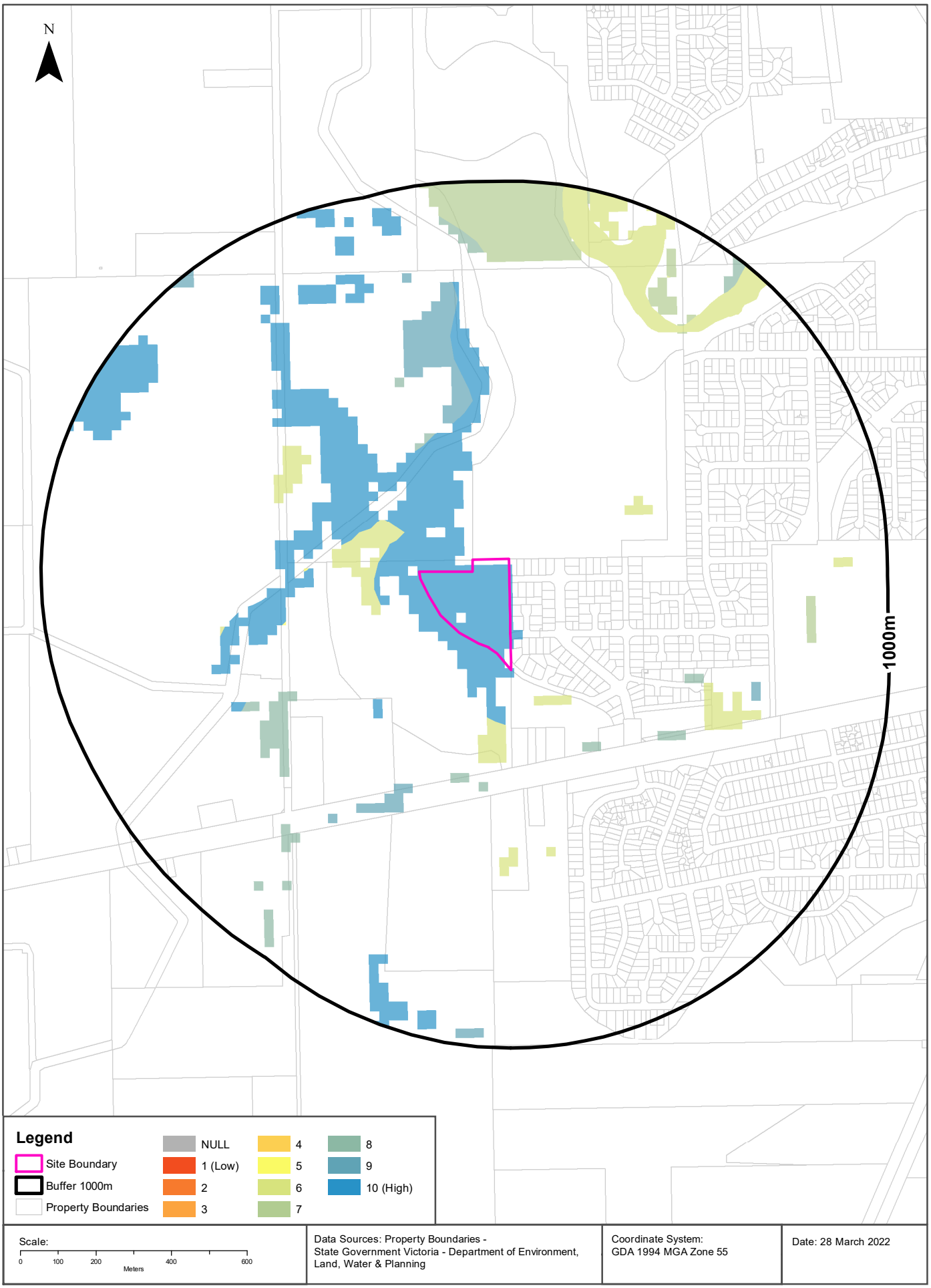

Ecological Constraints

294 McLennan Street, Mooroopna, VIC 3629

Inflow Dependent Ecosystems Likelihood

Type	Name	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance	Direction
Terrestrial		10	Alluvial plain.	Vegetation		0m	On-site
Terrestrial		6	Alluvial plain.	Vegetation		90m	South East
Terrestrial		8	Alluvial plain.	Vegetation		267m	South East
Terrestrial		5	Alluvial plain.	Vegetation		292m	West
Terrestrial		9	Alluvial plain.	Vegetation		363m	North
Aquatic		6	Alluvial plain.	Wetland		715m	North East
Terrestrial		7	Alluvial plain.	Vegetation		744m	North East

Inflow Dependent Ecosystems Likelihood Data Source: The Bureau of Meteorology

Location Confidences

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

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

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