Preliminary Site Investigation

Maitland Gaol Redevelopment

Prepared for Maitland City Council

January 2023

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Maitland City Council

E221249 RP1

January 2023

Version	Date	Prepared by	Approved by	Comments
1	13 January 2023	Thomas Mailler	Anthony Davis	Draft
2	26 January 2023	Thomas Mailler	Jess Byrne	Final

Approved by

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26 January 2023

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Executive Summary

ES1 Introduction

EMM Consulting Pty Limited (EMM) was commissioned by Maitland City Council (MCC) to undertake a Stage 1 Preliminary Site Investigation (PSI) of a portion of Maitland Gaol (the Gaol) identified as part of Lot 469 in Deposited Plan (DP) 1002766 (hereafter referred to as the Site).

The PSI is required to support the development application for the Maitland Gaol redevelopment project which aims to activate areas inside the entrance of the Gaol. The project will consist of:

- Redevelopment of the 'Store' building (Building 14) to provide:
  - a new ticketing office and gift store;
  - new administration office space;
  - upgraded amenities;
  - renovated theatre with bar, foyer, auditorium (pax:256) and back of house; and
  - a new loading dock.
- Redevelopment of the 'Gaol Staff/Warder's Amenities' building (Building 22) consisting of:
  - Demolition of Building 22;
  - Construction of a new café (pax: 76);
  - Construction of basement staff parking; and
  - Construction of enhanced access points.
- Construction of a new 17 space gravel car park including two accessible parking spaces and associated landscaping.

ES2 Objectives and scope of work

The objectives of obtaining and reviewing the information in this PSI are to:

- identify and assess potential contamination risks associated with current and historical site uses; and
- provide recommendations for any further investigations or management to mitigate contamination risk, if required.

To achieve the objectives, EMM conducted a Site inspection and completed a desktop review of available information relating to the Site to assess current and historical potential contamination sources. The scope of work for the desktop review included:

- a Summary of relevant contamination related background information relating to the Site and surrounding area, including:
  - the NSW EPA Contaminated Land Record register;

- database searches to assess elements of environmental inputs including historical land use, land zoning, geology, hydrogeology and topography;
- historical aerial imagery (for changes over time);
- online searches for specific historical information and other relevant documents;
- review of acid sulfate soil maps for the Site and surrounding land;
- review of a previous investigation report information provided by MCC; and
- historical certificates of title; and

- development of a preliminary conceptual site model (CSM) and qualitative risk assessment to assess the potential contamination risks and determine whether further investigation or management is required.

ES3 Findings

The majority of the Site is understood to have been occupied by the Gaol since the late 19th century with some agricultural land use along the north-west boundary until the 1970s. The layout of the Site has changed over time. Based on historical aerial imagery and photographs provided by MCC, it is understood that at least two smaller buildings were historically present on the Site (one within the current footprint of the Store Building (Building 14) and one within the central courtyard area of the Site) which have since been demolished. The Gaol's closed in 1998, with part of the Gaol Staff/Warders Amenities Building (Building 22) converted to a café.

The Site is bounded by the remainder of the Gaol to the east, the East Maitland Courthouse and Anzac Park to the south-west and by low-density residential properties to the north and west. Further to the south-west is the Main Northern Railway with East Maitland Station being located to the west of the Site. Some agricultural properties are also located approximately 100 meters (m) north of the Site. A disused boiler room is present within the north-east section of Building 14 but is outside of the Site boundary.

In addition to the four buildings subject to redevelopment as part of the proposed Maitland Gaol redevelopment, the Site inspection identified the presence of:

- three petrol bowsers and associated vent pipes, indicating the presence of three underground petroleum storage systems (UPSS);
- a wastewater cooling pit;
- an industrial cooling unit;
- a large generator;
- a legionella treatment plant; and
- a water feature.

A maintenance workshop within Building 14 was visited during the Site inspection which contained garden maintenance equipment. Several 20 litre (L) fuel and oil drums were identified and a hydrocarbon odour was noted. A 20 L drum of BL10-B Turbo Truckwash was also identified near the entrance to the basement loading

dock in Building 14. Several 20 L drums believed to contain used cooking oil were also observed near the generator.

The Gaol relied on the local Fire Brigade for firefighting. Firefighting training is known to have occurred off-Site at the Gaol however as no formal records exist, firefighting training may have also been undertaken within the Site.

Potential asbestos containing material (ACM) was identified during the Site inspection and ACM is known to occur in all four buildings within the Site. No spills, stains nor gross contamination at the ground surface was observed at the ground surface. It is noted that a Hazardous Materials Register has recently been updated (Hazmat Services, 2022).

The information inputs summarised herein identify potentially complete source-pathway-receptor (S-P-R) linkages resulting from potential contamination at the Site. Based on the Site inspection and information reviewed as part of this PSI, any contamination present on the Site would most likely be attributed to:

- the presence of ACM in building materials;
- the presence of UPSS and associated infrastructure;
- spills and leaks from the operation and/or deterioration of a large generator;
- improper storage of chemicals including used cooking oil;
- potential firefighting training that may have historically occurred at the Site;
- potential use of the Site as a washdown area;
- use of fill which may contain ACM or other contaminants of potential concern (CoPC); and
- improper use of the wastewater cooling pit resulting in overtopping.

Key pathways include the vertical migration of CoPC through the soil profile, migration of CoPC via groundwater transport, surface water runoff and atmospheric dispersion of dust or fibres. Potential receptors include current and future land users, construction workers involved in the redevelopment works, off-Site land users and ecological receptors.

The Site's preliminary CSM identified several potential contamination sources which have a potential exposure scenario to on-Site and off-Site receptors. Key areas and contaminants around the Site have been identified as requiring further assessment through intrusive investigation to provide a quantitative assessment of the risk to receptors and the overall contamination risk and suitability of the Site for the proposed land use.

Significant and/or widespread chemical contamination of fill, soil, surface water and groundwater at the has not been identified however the presence of ACM in the buildings within the Site is noted. As such, potentially complete S-P-R linkages exist for construction workers involved in the redevelopment works.

Additionally, there are several moderate risk potential contamination sources that are unquantified and potentially complete S-P-R linkages may already exist with off-Site human and ecological receptors or may form with human receptors as part of the proposed redevelopment works.

ES4 Recommendations

A detailed site investigation (DSI) is recommended to be undertaken at the site prior to the commencement of redevelopment works to:

- further evaluate the presence of potential contamination identified in this PSI;

- ensure any potential contamination does not pose a risk to construction workers or futures users of the Site; and
- characterise material to evaluate suitability for disposal (if required).

Furthermore, it is recommended that the identified UPSS are managed in accordance with the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*. This includes removing residual product that may be present in underground storage tanks (UST's) and decommissioning by removal if the tanks have not been used for two years or longer.

Given the Site has been identified to be present within the Maitland unexploded ordinance (UXO) area further desktop assessment should be undertaken and documented in an unexpected finds protocol for future redevelopment works.

Abbreviations

Abbreviation	Term
ACM	Asbestos containing materials
ANZG	Australian and New Zealand Governments
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 2013
ASS	Acid sulfate soils
BTEXN	Benzene, toluene, ethylbenzene, xylene, napthalene
CHL	Commonwealth Heritage List
CLM Act	NSW Contaminated Land Management Act 1997
CMP	Conservation management plan
CoPC	Contaminants of Potential Concern
CSM	Conceptual site model
DP	Deposited Plan
EMAA	Erin Martin & Associates
EMM	EMM Consulting Pty Limited
EP&A Act	NSW Environmental Planning and Assessment Act 2000
EPA	Environmental Protection Authority
EPL	Environmental Protection Licence
ESP	Environmental & Safety Professionals
GDE	Groundwater dependant ecosystems
HEPA	Heads of EPAs Australia and New Zealand
LABS	Linear alkyl benzene sulfates
LEP	Local Environmental Plan
m	metres
m AHD	metres Australian Height Datum
MCC	Maitland City Council
NHL	National Heritage List
NSW	New South Wales
OCPs	Organochlorine pesticides
OPPs	Organophosphate pesticides
PAH	Polynuclear aromatic hydrocarbons
PFAS	Per- and polyfluoroalkyl substances
POEO Act	NSW Protection of the Environment Operations Act 1997

Abbreviation	Term
PSI	Preliminary Site Investigation
SDS	Safety Data Sheet
SEPP	State Environmental Planning Policy
S-P-R	Source-pathway-receptor
SVOC	Semi-volatile organic compounds
TRH	Total recoverable hydrocarbons
UPSS	Underground petroleum storage system
USTs	Underground storage tanks
UXO	Unexploded ordinance
VOCs	Volatile organic compounds
WHA	World Heritage Area
WWII	Second World War

TABLE OF CONTENTS

Appendices

Tables

Figures

1 Introduction

1.1 Background

EMM Consulting Pty Limited (EMM) was commissioned by Maitland City Council (MCC) to undertake a Stage 1 Preliminary Site Investigation (PSI) to assess a portion of Maitland Gaol (the Site, the Gaol). The Site is identified as a portion of Lot 469 in Deposited Plan (DP) 1002766. Refer to Figure 1.1 for the Site location.

EMM understand that this PSI is required to support the development application for the Maitland Gaol redevelopmentproject which aims to activate areas inside the entrance of the Gaol. The project works will consist of:

- Redevelopment of the 'Store' building (Building 14) to provide:
  - a new ticketing office and gift store;
  - new administration office space;
  - upgraded amenities;
  - renovated theatre with bar, foyer, auditorium (pax:256) and back of house; and
  - a new loading dock.
- Redevelopment of the 'Gaol Staff/Warder's Amenities' building (Building 22) consisting of:
  - Demolition of Building 22;
  - Construction of a new café (pax: 76);
  - Construction of basement staff parking; and
  - Construction of enhanced access points.

Construction of a new 17 space gravel car park including two accessible parking spaces and associated landscaping.

1.2 Objectives

The objectives of obtaining and reviewing the information in this PSI are to:

- identify and assess potential contamination risks associated with current and historical site uses; and
- provide recommendations for any further investigations or management to mitigate contamination risk, if required.

1.3 Scope of works

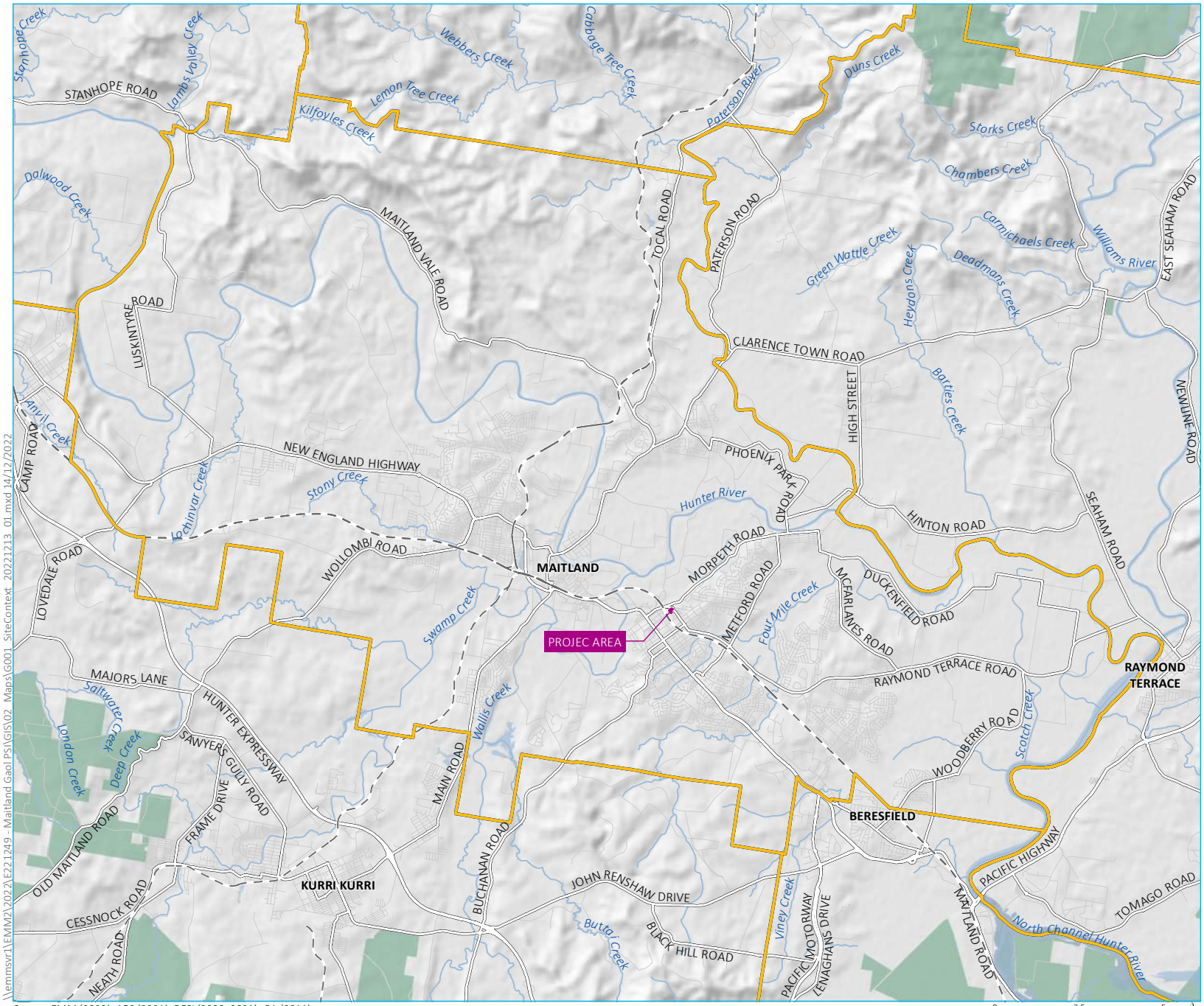
To achieve the objectives, EMM conducted a Site inspection and completed a desktop review of available information relating to the Site to assess current and historical potential contamination sources. The methodology for the desktop review included:

- a Summary of relevant contamination related background information relating to the Site and surrounding area, including:

- the NSW EPA Contaminated Land Record register;
- database searches[1] to assess elements of environmental inputs including historical land use, land zoning, geology, hydrogeology and topography;
- historical aerial imagery (for changes over time);
- online searches for specific historical information and other relevant documents;
- review of acid sulfate soil maps for the Site and surrounding land;
- review of a previous investigation report information provided by MCC; and
- historical certificates of title; and

- development of a preliminary conceptual site model (CSM) and qualitative risk assessment to assess the potential contamination risks and determine whether further investigation or management is required.

[1] The database searches were conducted by Land Insight and Resources Pty Ltd (LI Resources). The LI Resources Due Diligence Insight report is provided in Appendix A which includes a list of all searches and data sources including NSW Environmental Protection Authority contaminated lands databases, NSW groundwater bore databases, geological and soil landscape maps and historical business directory data.



KEY

- Project area
- Rail line
- Major road
- Minor road
- Named watercourse
- Named waterbody
- Local government area
- NPWS reserve
- State forest

INSET KEY

- Major road

Source: EMM (2022); ABS (2021); DFSI (2020, 2021); GA (2011)

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Site location

Maitland Gaol
Preliminary Site Investigation
Figure 1.1

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2 Regulatory framework

Applicable legislation informing this assessment includes:

- NSW *Contaminated Land Management Act 1997* (CLM Act);
- NSW *Protection of the Environment Operations Act 1997* (POEO Act); and
- NSW *Environmental Planning and Assessment Act 2000* (EP&A Act) and State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021.

Applicable guidelines supporting this assessment include:

- National Environment Protection (Assessment of Site Contamination) Measure (2013), including 20 Schedules and Appendices (B1 to B9), and the NEPM Toolbox, updated April 2014 (the ASC NEPM);
- NSW EPA Consultants reporting on contaminated land: Contaminated land guidelines, updated May 2020; and
- NSW EPA Guidelines for the NSW Site Auditor Scheme (3rd edition), 2017.

3 Environmental setting

3.1 Site identification

Site identification details are presented in Table 3.1 below.

Table 3.1 Site description

Site location	6-18 John Street Maitland, NSW
Site layout	Refer to Figure 3.1
Title identification details	Part Lot 469 DP1002766
Lease/ownership details	Crown Land managed by Maitland City Council.
Site features	The Site includes the following: • Building 2 – Former Lieutenant Governor's Residence (currently unused/used for storage) • Building 3 – Former Governor's Residence (currently the Maitland Gaol Visitor information centre and with some rooms used as a rehearsal space for the University of Newcastle's Conservatorium of Music) • Building 14 – Former Store and Work Centres (formerly housed the shower block and the laundry, now used for storage, as a rehearsal space for the Maitland Musical Society and houses an Auditorium) • Building 22 – Former Gaol Staff/Warden's Amenities (currently the Bread and Water Café) The outdoor area in the north-west portion of the Site includes (from north-east to south-west): • a cooling pit for laundry wastewater; • an industrial cooling unit; • three petrol bowsers and associated underground storage tanks (USTs); • a large generator; • a legionella treatment plant; and • a water feature. All of these were disused at the time of inspection. These Site features are displayed on Figure 3.1.
Local government area	Maitland City Council
Current land use and zoning	Zoning: SP3 - Tourist Land use: The Site currently has several users including the Maitland Gaol Visitor Information Centre, the Bread and Water Café and tourist activities. The Maitland Gaol offers tours and hosts several festivals. A more detailed description of the land use of the Site is provided in Section 6.1. Environmental Planning Instruments: The Site is included in the State Environmental Planning Policy (SEPP) (Resources and Energy 2021 as being within a Coal Seam Gas Exclusion zone.

Table 3.1 Site description

Proposed land use	The proposed land use for the Site is primarily commercial. It will largely be focussed on providing visitor information and amenities. The project will aim to provide central support services and amenities for the entire Gaol, improved café operation, larger and more suitable spaces for sales. Building 2 – Lieutenant Governor's Residence and Building 3 - Governor's Residence are both proposed to be refurbished for boutique accommodation.
Surrounding land use	North: Low-density residential properties adjacent to the Site with agricultural properties located further to the north. The Maitland Grossmann High School is approximately 50 m north-east of the Site. Several unnamed channels exist approximately 250 m north-west of the Site which may be used for irrigation. The former Pender and Foster Sawmill is located approximately 400 m north-west of the Site. East: Primarily low-density residential properties with some public recreational areas further to the east. The Hiland Crescent Cemetery is located approximately 600 m north-east of the Site. South: Low-density residential properties are located immediately south of the Site West: The East Maitland Court House is located adjacent to and south-west of the Site and is surrounded by Anzac Park. The Main Northern Railway runs north-west/south-east and is adjacent to Anzac Park. East Maitland Station is situated west of the Site. Further to the south-west are primarily low-density residential and commercial properties. A drainage line appears to be present in the north portion of Anzac Park between the Site and East Maitland Station.

3.2 Geology and soils

The dominant subsurface profile at the Site consists of mixed interbedded sedimentary deposits associated with the Tomago Coal Measures which are overlain by moderately deep to deep, moderately well to imperfectly drained soils consistent with the Beresfield Residual soil group. To the north and west of the Site and adjacent to Wallis Creek, the underlying geology consists of alluvial floodplain and terrace deposits consisting of clay, silt, fine to medium-grained quartz-lithic sand and polymictic gravel consistent which is overlain by Hunter Alluvium. A tabulated summary of the geology and soils is provided in Appendix A. The geological and soil mapping is presented in Appendix B.

The NSW Planning and Environment acid sulfate soils (ASS) database reports the Site is classified as Soil Class 5, indicating that the potential for adverse environmental impacts associated with ASS is very low. Acid sulphate soils are not typically found in Class 5 areas. The soils within 500 m of the property are classified as Class 4 (approximately 100 m to the north). Acid sulphate soils in Class 4 areas are likely to be found beyond 2 metres below the natural ground surface. Therefore, it is considered that there is a very low potential risk of ASS and specific ASS mitigation measures would not be required as part of any potential future excavation works.

No salinity hazard was identified for the Site.

3.3 Hydrology and hydrogeology

The Site and surrounds feature porous, extensive aquifers of high productivity. There were no groundwater dependant ecosystems (GDE) identified within the Site or immediate surrounds.

A search of the NSW Department of Primary Industries – Office of Water dataset indicated that there are 27 registered groundwater bores within 2000 m of the Site. No registered groundwater wells were identified within 500 m of the Site. Available information on these monitoring wells is provided in Appendix A.

The database search (Appendix A) returned 54 other known borehole investigations within a 500 m buffer from the Site. The majority of these were investigations undertaken by the NSW Roads and Maritime Service (now Transport for NSW) approximately 300 m to the north-west of the Site except for two mineral exploration boreholes and a single geotechnical investigation all occurring within 50 m of the Site.

The Site was identified as being situated within an underground petroleum storage system (UPSS) sensitive zone. Three USTs and associated bowsers are known to be present at the Site.

The Site is situated approximately 1.3 kilometres (km) east of Wallis Creek and 1.3 km south-east of the Hunter River. Hydrological and hydrogeological mapping is presented in Appendix B.

3.4 Ecology and natural hazards

Except for the agricultural area, located north-east of the Site, the area surrounding the Site is completely urbanised.

Protected environmental corridors were identified within 2000 m of the Site and occur along the Hunter River and Wallis Creek. Wetlands were identified along the Hunter River to the north-west of the Site and within a quarry located adjacent (south) to the Main Northern Railway to the south-east of the Site. Neither protected environmental corridors or wetlands occur within a 500 m radius of the Site. Mapping of these features is provided in Appendix B.

The agricultural land approximately 90 m north of the Site was identified as having medium bushfire risk with a potential impact area extending to within approximately 60 m of the Site. Bushfire hazard mapping is provided in Appendix B.

The Site has moderate risks for wind and water erosion. The Maitland LEP (2011) also classifies and are approximately 60 m north-west of the Site as being a flood planning area.

3.5 Heritage

The Site is listed on the Maitland Local Environmental Plan (LEP) (2011) (site ID I52 and C3). Site ID I52 includes the entire Maitland Correctional Centre and site ID C3 encompasses the East Maitland Heritage Conservation Area, which includes the East Maitland Courthouse and associated parklands, the East Maitland Police Station, the former East Maitland Post Office, the Main Northern Railway and a number of houses (Appendix A).

The Site is also listed on the State Heritage Inventory (site ID 1296), which includes the entire Maitland Correctional Centre.

The Site does not contain items listed on the following heritage registers:

- National Heritage List (NHL);
- Commonwealth Heritage List (CHL); or
- World Heritage Area (WHA).

KEY

- Project area
- Building asset

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Source: EMM (2023); DFSI (2020, 2021); Metromap (2022)

0 10 20 m

GDA2020 MGA Zone 56

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Site layout

Maitland Gaol
Preliminary Site Investigation
Figure 3.1

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4 Site history

A review of historical aerials for the period 1954–2022 provided insights into the historical and current land uses at the Site as described in Table 4.1. The historical aerials are provided in Appendix C.

4.1 Aerial review

Table 4.1 Aerial photograph review

Year/Image quality	Site	Surrounding area
1954 Black and white	The Building 2 and Building 3 are both visible. Building 14 and Building 22 are not present. The north-west border section of the Site appears to be used for agricultural activities.	The area surrounding the Site is generally consistent with present day conditions (predominantly low density residential with agricultural land use north of the Site) with key differences being: • Building 18 – 5 Wing Maximum Security and Building 36 – Visits Processing Centre within the south-east portion of the Gaol are not visible; • agricultural land use is present to the immediate north-west of the Site; • the Pender and Foster Sawmill located approximately 400 m north-west of the Site appears to be operational; • current industrial land use west of the Main Northern Railway is not present; • the Maitland Grossman Highschool is much smaller than its present size; and • areas currently occupied by low density residential properties east of the Site appear to be used for agricultural activities.
1966 Black and white	Generally consistent with the previous aerial. A building may be present within the north-west portion of the Site.	Generally consistent with the previous aerial. New buildings have been constructed at the Maitland Grossman Highschool. The area immediately east of the Sawmill is disturbed and may be used for stockpiling. There are also an increased number of low-density residential properties to the east of the Site. Industrial land use may be present west of the Main Northern Railway.
1970 Black and white	Generally consistent with the previous aerial.	Generally consistent with the previous aerial.
1976 Black and white	Generally consistent with the previous aerial. Building 14 is now visible.	Generally consistent with the previous aerial. Building 18 within the south-east portion of the Gaol appears to be visible. There is also an increased number of low-density residential properties to the east of the Site. Agricultural land use is no longer visible to the immediate north-west of the Site.
1984 Black and white	Generally consistent with the previous aerial.	Generally consistent with the previous aerial.
1987 Black and white	Generally consistent with the previous aerial. Detail cannot be discerned due to the poor quality of the photograph.	Generally consistent with the previous aerial. Detail cannot be discerned due to the poor quality of the photograph.

Table 4.1 Aerial photograph review

Year/Image quality	Site	Surrounding area
1993 Colour	Generally consistent with the previous aerial. The Gaol Staff/Warden's Amenities (Building 22) is now visible.	Generally consistent with the previous aerial. Building 36 is now visible within the southeast portion of the Gaol. The disturbed area adjacent to the Sawmill is largely intact and appears to be used for stockpiling of logs. The roundabout at the junction of Morpeth Road, Cumberland Street and John Street has been constructed.
1998 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial. The area adjacent to the Sawmill appears to be disused.
2001 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial.
2005 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial. The Sawmill appears to have ceased operation.
2011 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial. The Pitnacree Road overpass of the Main Northern Railway north-west of the Site has been constructed.
2014 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial.
2016 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial.
2019 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial.
2022 Colour	Generally consistent with the previous aerial.	Generally consistent with the previous aerial. Additional buildings have been constructed at the Maitland Grossman High School.

4.2 Review of historical mapping

A review of historical mapping identified two maps of the Site and surrounds as described below:

- 1969 1:25,000 Topographic Map Maitland 9232-4S; and
- 1991 1:25,000 Topographic Map Beresfield 9232-3N.

The Site itself is shown within the 1969 Maitland sheet with the 1991 Beresfield sheet showing the surrounding area to the south. The historical maps are provided in Appendix C.

An isolated building (purpose unknown) is marked within the north-west portion of the Site. This is consistent with historical aerial imagery from 1966-1970. The remainder of the mapping is generally consistent with the current Site and surrounds with the exceptions of the Pitnacree Road overpass of the Main Northern Railway and the roundabout at the junction of Morpeth Road, Cumberland Street and John Street. This is consistent with historical aerial imagery from this time.

4.3 Review of historical photographs

MCC provided EMM with five historical photographs of the Site. The dates of these photographs are unknown. These have been provided in Appendix D.

Photograph 1 shows the Site viewed from the west. Building 14 and Building 22 are not present however several smaller buildings are present within the north-west portion of the Site.

Photograph 2 shows the Gaol from the watchtower located within the central area of the Site, looking north-east. Building 14 does not appear to be present in the photograph.

Photograph 3 has been taken from near the western boundary of the Site, looking east towards the present location of Building 22. Building 14 and Building 22 are not present in the photograph however Building 2 is visible.

Photograph 4 shows the Gaol from the watchtower located within the central area of the Site, looking south-east. A building, labelled as being the Photo Gallery/Messenger's Shed, is present within the brick courtyard area within the central portion of the Site. Building 2 is also visible in the photograph.

Photograph 5 is taken slightly to the north-east of Photo 4 facing towards the south and shows an alternative view of the Photo Gallery/Messenger's Shed and Building 2. The Gatehouse (Building 1) is also visible within the photograph.

4.4 Previous investigations

Two previous investigations reports were made available to EMM and is summarised below.

4.4.1 Erin Martin & Associates (EMAA) (2022), Maitland Gaol Conservation Management Plan

MCC engaged EMAA to update the Conservation Management Plan (CMP) for the Gaol. The objectives of the CMP were to:

- provide a sound basis for the development of a master plan for the Gaol;
- provide a detailed heritage assessment, policies and implementation strategies for individual buildings and areas; and
- facilitate site specific exemptions for future development proposals, and specific conservation work exemptions under the NSW Heritage Act.

EMAA found that Building 2 and Building 3 were both completed in 1875, however information provided by MCC suggests that construction of Building 2 only commenced in 1877. They list the condition of both buildings as being "poor through lack of use" and "reasonable except for the basement which has rising damp and water ponding in the light well" respectively. EMAA also states that both buildings are constructed of ashlar sandstone.

No construction dates were provided for Building 14 and Building 22 however EMAA suggests both were built post 1900 with Building 22 being a "modern addition". Building 22 is known to have been constructed in the 1970s. They state that Building 14 is constructed of orange brick and the condition of both buildings is "reasonable" however EMAA were unable to inspect Building 22 internally.

4.4.2 Environmental & Safety Professionals (ESP) (2015), Maitland City Council Asbestos Register Update

ESP were engaged by MCC to carry out an inspection at Maitland Gaol on 11 November 2015 and update the Asbestos Register. The inspection involved visual inspection and sampling of suspected asbestos containing materials (ACM) where practicable.

The results of the survey indicated:

- friable asbestos was not identified within internal or external areas; and
- bonded asbestos was identified within internal and external areas.

Within the Project Site, bonded asbestos was detected in the following areas:

- Building 2 – Lieutenant Governor's Residence: ceiling and vinyl flooring: Chrysotile asbestos detected;
- Building 3 – Governor's Residence: ceiling lining, wall lining, vinyl flooring and ceiling cavity: Chrysotile asbestos detected;
- Building 22 – Gaol Staff/Warden's Amenities: Chrysotile asbestos detected in air-conditioning awning adjacent to the Bakery/Café; and
- Building 14 – Workshop/stores Building: Auditorium vinyl floor tiles: Chrysotile asbestos detected and laundry, toilet partitions deemed to contain asbestos.

External eaves at various locations throughout the Gaol were deemed to contain asbestos which may include buildings within the Site. EMM also notes that potential ACM was identified during the Site inspection undertaken on 20 December 2022 that was not analysed or reported on by ESP (refer to Section 6.1).

4.4.3 Hazmat Services (2022), Hazardous Materials Survey: Maitland Gaol – 6-18 John Street, East Maitland (Draft version)

MCC engaged Hazmat Services to undertake a Hazardous Materials Survey of the accessible exterior and interior of Building 2, Building 3, Building 14 and Building 22.

The purpose of the survey was to identify the location, extent and condition of accessible hazardous building materials present at the Site and also determine the likely impact of these materials on persons accessing the Buildings. The scope of the survey included asbestos containing materials (ACM), synthetic mineral fibres (SMF), lead based paint, polychlorinated biphenyls (PCB) materials and lead and asbestos in ceiling dust.

The results of the survey indicated the following hazardous building materials were discovered:

- Building 2 – Lieutenant Governor's Residence: ACM, SMF and lead based paint.
- Building 3 – Governor's Residence: ACM, SMF and lead based paint.
- Building 14 – Stores Building: ACM and lead based paint.
- Building 22 – Café/Old Warders Amenities: ACM and SMF.

5 Potential regulatory contamination issues

5.1 Contaminated land records

Three contaminated sites were identified on the NSW EPA Contaminated Land Record of Notices within 1000 m of the Site:

- Caltex East Maitland Service Centre;
- United Service Station East Maitland; and
- Former Gasworks Site at the corner of Melbourne Street and Brisbane Street, East Maitland.

No sites were identified within 500 m of the Site.

5.2 Licensed activities

There is one surrendered NSW EPA Environment Protection License (EPL) at the Site issued to the NSW Soil Conservation Service for the Waterways Within the Hunter Valley Flood Mitigation Scheme (EPL Number 12439).

An additional two licenses were issued to the Forestry Corporation of NSW (EPL Numbers 3957 and 4017) which encompass the Lower and Upper North East Regions respectively, however these only relate to forestry activities in State Forests and Crown-Timber Lands. Both licenses are no longer in force.

5.3 Clean-up and penalty notices

No clean-up or penalty notices were identified for the Site or immediate surrounds.

5.4 Other potentially contaminating activities

The Site is located within the Maitland unexploded ordinance (UXO) area. Maitland was used for military training and camps during the Second World War (WWII).

The Main Northern Railway (approximately 110 m south-west of the Site) is also listed as a potentially contaminating activity.

There were no other identified NSW EPA records or other potential regulatory contamination issues within a minimum 500 m radius of the Site for the following searches undertaken (refer to Appendix A):

- per- and poly-fluoroalkyl substances (PFAS) site investigations;
- aviation fire fighting facilities;
- cattle dip sites;
- derelict mines/quarries;
- dry cleaners;
- gas terminals;
- liquid fuel depots or terminals;
- petrol stations;

- landfills/waste management or water treatment facilities;
- telephone exchanges;
- power stations; and
- electrical substations.

5.5 Commercial and trade directory data

A search of historical business directories found that the area surrounding the Site has historically included businesses in construction, manufacturing, plumbing, painting and retail (refer to Appendix A).

5.6 Historical certificates of title

Table 5.1 shows the historical certificates of title (refer to Appendix E).

Table 5.1 Historical certificates of title

Date	Proprietor
Lot 469 DP1002766	
2 July 1999 to date	The State of NSW
(12 May 1894 to date)	*(Reserve 20743 for Gaol and Lockup, notified Government Gazette 12 May 1894 & Government Gazette 18 Mar 1977)*
Allotment 6 Section 21 Town East Maitland[2]	
Prior to 2 July 1999	Crown Land
(18 Mar 1977 to 02 Jul 1999)	*(Part Allotment 6 Section 21 Town East Maitland, added to Reserve 20743 for Gaol and Lockup, notified Government Gazette 12 May 1894 vide Government Gazette 18 Mar 1977)*
(23 Feb 1973 to 18 Mar 1977)	*(Reserve 888858 for Civil Defence Purposes)*
(21 Sept 1889 to 02 Jul 1999)	*(Reserve 9705 for Police Purposes, notified Government Gazette 21 Sep 1889)*
Allotment 7 Section 21 Town East Maitland[3]	
Prior to 02 Jul 1999	Crown Land
(12 May 1894 to 02 Jul 1999)	*(Reserve 20743 for Gaol and Lockup, notified Government Gazette 12 May 1894)*

[2] The north-west portion of Lot 469 DP1002766 (refer to Appendix E)

[3] The south-east portion of Lot 469 DP1002766 (refer to Appendix E)

6 Site inspection and surrounding lands

6.1 Site observations

A walkover of the Site was undertaken by an EMM environmental engineer on 20 December 2022 accompanied by a MCC representative.

During the Site inspection, it was communicated that the Gaol relied on the local Fire Brigade for firefighting. It was also communicated that the original ground level around Building 2 and Building 3 had been raised from the basement floor level to the first-floor level.

Features identified during the Site inspection are presented in Table 6.1 with a photographic record included in Appendix F.

Table 6.1 Site observations

Feature	Photos (Appendix D)	Comments
Building 2 – Former Lieutenant Governor's Residence	1, 2, 3, 4 and 5	Building 2 was disused during the time of inspection. A former exercise/gym area was identified in the basement. Other rooms in Building 2 may have been used for office spaces. Potential ACM was observed in the ceiling material of the ground floor and in the wall cladding in the basement. Water damage resulting from ingression of groundwater was observed in the basement. ACM may also be associated with the carpet in the exercise/gym area.
Building 3 – Former Governor's Residence	6	Building 3 was largely used by the Maitland Gaol Visitor Information Centre at the time of inspection. This included a reception area and conference room downstairs and a kitchen area and office space upstairs. Two upstairs rooms were also used as rehearsal spaces for the University of Newcastle's Conservatorium. The basement is used as document and electronics storage. Potential ACM was observed in the wall cladding in the basement. Water damage resulting from ingression of groundwater was observed in the basement.
Building 14 – Former Store and Work Centres	8, 9, 10, 11, 12, 13, 14, 17, 18, 19, 20, 21, 22, 23, 25 and 26	Building 14 included a rehearsal/storage space and auditorium used by the Maitland Musical Society, the former shower block and the former laundry. A disused boiler room is also located within the north-east section of the building however it is excluded from the Site. There are also a number of rooms used for storage. The former laundry was used to store garden maintenance equipment at the time of inspection. Several 20 L fuel containers were observed in an attached room. A hydrocarbon odour was noted. A 20 L drum of BL10-B Turbo Truckwash was observed near the entrance basement loading dock. A disused boiler room was identified in the north-east end of Building 14. It should be noted that the boiler room is outside of the Site. A fuel/oil emergency shutoff valve was identified on the north-west wall of Building 14 adjacent to and on the southern side of the boiler room.
Building 22 – Gaol Staff/Warden's Amenities	27	Building 22 is currently leased by the Bread and Water Café. It includes an open seating area and a kitchen.
UPSS and Petroleum Bowsers	18, 19, 20 and 23	Three petroleum bowsers (labelled as diesel, super and standard) along with three vents were observed north-west of Building 14. Whilst the exact age of the bowsers is unknown, it is estimated that they are over 50 years old. The bowsers appeared to be deteriorating with a large amount of surface rust. Fill points and monitoring wells were not observed during the Site inspection.

Table 6.1 Site observations

Feature	Photos (Appendix D)	Comments
Generator	17	A large, derelict generator was observed in the vegetated area near Buildings 14 and 22. Several 20 L plastic and metal cooking oil drums were observed. The drums were filled to varying levels with what appeared to be used cooking oil. The drums appeared to be intact and were in reasonable condition.
Legionella Treatment Plant	16	A disused treatment plant believed to be used for the treatment of legionella in the air conditioning system was observed adjacent to the derelict generator near the Café. Based on observed signage, it is believed that chlorine was used in the treatment process.
Water Feature	15	A disused water feature was observed in the western portion of the Site.
Cooling Unit	23	A large cooling unit was observed during the Site inspection on the ground to the north-west of Building 14. The unit appears to have been disconnected and was in reasonable condition with some surface rust.
Wastewater Cooling Pit	24	A large pit was observed towards the northern area of the Site. It is understood that wastewater from the laundry was held here to cool prior to discharge into the sewer. It was non-operational at the time of inspection.
Courtyard	7	A brick courtyard is present in the central portion of the Site.

6.2 Surrounding lands

The Site forms part of the western portion of the Maitland Gaol. The main Gaol area is located immediately to the east of the Site and consists of the A, B and C Wings, exercise yards, a former chapel and associated prison infrastructure. Immediately to the north-west of the Site and within the Gaol boundary, land use comprised open space.

The Gaol is bordered by Lindesay Street to the north-east and by John Street to the south-west with the Gaol only being accessible from John Street. Opposite the Gaol to the south-west of the Site is the East Maitland Courthouse, which is surrounded by Anzac Park. Beyond this is the Main Northern Railway including the East Maitland Railway Station to the west of the Site. Further to the west are low density commercial and residential properties with some industrial properties located along Melbourne Road.

Surrounding the Gaol to the north-west, north-east and south-east are low density residential properties. The Maitland Grossman Highschool is located approximately 100 m to the north-east of the Site and the Hunter River Community School is located approximately 420 m to the south-east of the Site. Agricultural land is located approximately 180 m to the north of the Site along with a disused sawmill approximately 400 m north-west of the Site.

Several irrigation channels exist to the north of the Site with the nearest being located approximately 250 m from the Site. A drainage line is present within Anzac Park near the East Maitland Railway Station approximately 100 m to the west of the Site.

7 Assessment of sources, pathways and receptors

7.1 Sources and contaminants of potential concern

Table 7.1 shows a summary of the potential sources of contamination and associated contaminants of potential concern (CoPC) identified as an outcome of the information review and Site inspection.

Table 7.1 Summary of potential sources of historical contamination and CoPC

Potential sources of contamination	CoPC	Likelihood of contamination/release mechanisms
USTs and associated infrastructure	BTEXN[4], TRH[5], ACM[6], heavy metals[7]	Potential – the presence of three fuel bowsers and vent pipes to the north-west of Building 14 indicate the presence of three USTs used for petroleum storage. As no known records exist pertaining to the USTs (including maintenance records), the condition of the USTs is unknown. Given the estimated age of the bowsers, ACM may be present in components of the UPSS and associated infrastructure. Contamination may have resulted from spills associated with the use of the UPSS or from leaks resulting from deterioration of the USTs.
Building materials notably ACM and lead.	ACM, heavy metals	Known – ACM has been identified within each of the buildings located within the Site as documented in the asbestos register (ESP, 2015). Any historical conduits, service pipes or waste fill material may also contain bonded or friable asbestos. Lead may also be present in cladding and paint. ACM and lead may also be present in soils resulting from the demolition of former buildings and services.

4 BTEXN – benzene, toluene, ethylbenzene, xylene and naphthalene

5 TRH – total recoverable hydrocarbons

6 ACM – asbestos containing material

7 Heavy metals – arsenic, cadmium, copper, chromium, nickel, lead, mercury, tin, zinc

Table 7.1 Summary of potential sources of historical contamination and CoPC

Potential sources of contamination	CoPC	Likelihood of contamination/release mechanisms
Chemical storage	BTEXN, TRH, PAHs[8], heavy metals, phenols, VOCs[9], SVOCs[10], ACM, OCPs, OPPs, formaldehyde, nutrients[11]	Potential – Building 14 formerly housed the shower block, laundry and boiler room in addition to various storage areas all of which may have stored various chemicals. Additionally, the laundry is currently used as a storage area/maintenance workshop for gardening equipment. At the time of inspection, several 20 L petrol and oil drums were observed here with a strong hydrocarbon odour being noted. A 20 L drum of BL10-B Turbo Truckwash was also identified during the Site inspection. Contamination may be present because of spills and leaks.
Kitchen and wastes	Oil and grease, surfactants, nutrients	Potential – whilst the Café in Building 22 was unable to be inspected, it is understood that it houses a fully functioning kitchen including a 1000 L grease trap. Contamination may result from overtopping of the grease trap or from leaks however the latter is unlikely due to the age of the building. At the time of inspection, a large 20 L plastic drums containing what appeared to be used cooking oil were observed in an outdoor area adjacent to the derelict generator. Contamination may result from leaks forming due to deterioration, spills during handling or from oily residue on the exterior if the drums.
Wastewater cooling pit	Oil and grease, surfactants, nutrients, formaldehyde	Unlikely – it is understood that the large pit located north-west of Building 14 was used to cool untreated wastewater from the laundry, prior to discharge into the sewer. Contamination may be present downgradient of the pit resulting from overtopping of the pit although this would be considered unlikely if proper management procedures were observed.
Firefighting training	PFAS[12]	Potential – it is understood that the Gaol relied on the local Fire Brigade. Firefighting training is known to have occurred off-Site at the Gaol however as no formal records exist, firefighting training may have also been undertaken within the Site.

8 PAHs – polycyclic aromatic hydrocarbons

9 SVOCs – volatile organic compounds

10 SVOCs – semi volatile organic compounds

11 Nutrients – total nitrogen, total kjeldahl nitrogen, nitrate, nitrite, ammonia, total phosphorus

12 PFAS – per- and polyfluoroalkyl substances

Table 7.1 Summary of potential sources of historical contamination and CoPC

Potential sources of contamination	CoPC	Likelihood of contamination/release mechanisms
Generator	BTEXN, TRH, PAHs, VOCs, heavy metals, SVOCs, phenols, ACM	Potential – the large generator located to the north-west of Building 14 and Building 22 was in a visible state of deterioration at the time of inspection. Whilst the generator is situated on a concrete hardstand, the state of the hardstand and whether is acts as a bund is unknown. Contamination may have resulted from spills during the generators use or may be the result of deterioration of the generator itself.
Potential washdown area	BTEXN, TRH, PAHs, VOCs, heavy metals, SVOCs, phenols, surfactants	Potential – a 20 L drum of BL10-B Turbo Truckwash was observed near the entrance to the basement loading dock in Building 14 during the Site inspection. The Safety Data Sheet (SDS) for the truckwash states that it contains linear alkyl benzene sulfates (LABS) which are a type of ecotoxic anionic surfactant however it is expected to readily breakdown in the environment. It should be noted that this does not preclude the use of other longer lasting compounds that may have been used historically.
Use of fill materials	BTEXN, TRH, PAHs, heavy metals, phenols, ACM, SVOCs, PFAS	Potential – it is understood that the original ground level around Building 2 and Building 3 was the same as the basement floor level and has since been built up using fill material to the first floor level. Potential contaminants may have been brought onto the Site as a result.
UXO	UXO[13] and associated chemicals	Unlikely – whilst the Site has been identified as being within the Maitland UXO area, the risk of UXO is related to the use of Maitland as a military training area during WWII. As the Gaol remained in operation throughout the War, the risk of UXO being present at the Site is considered unlikely.
Main Northern Railway	ACM, heavy metals, TRH	Unlikely – whilst the Main Northern Railway is located approximately 110 m to the west of the Site, the risk of CoPC migrating to the Site is considered negligible due to the Railway being situated downgradient from the Site.

The following transport mechanisms may apply to CoPC identified at the Site:

- surface water runoff;
- vertical leaching by rainwater;
- groundwater transport;
- aeolian (windblown) transport of dust and fibres; and
- excavation and relocation of soils as part of proposed redevelopment activities.

Identified potential exposure pathways for the nominated CoPC include:

[13] UXO – unexploded ordinance

i) dermal contact and incidental ingestion of soil;

ii) inhalation of dust, paint flakes (including soil derived) or fibres;

iii) dermal contact and incidental ingestion of groundwater/surface water;

iv) inhalation of soil/groundwater vapours in indoor air;

v) inhalation of soil/groundwater/surface water vapours in outdoor air;

vi) inhalation of soil/groundwater vapours within a trench;

vii) plant uptake and/or ingestion by animals (including aquatic flora and fauna); and

viii) uptake of CoPC from groundwater (stygofauna and microorganisms).

Based on the physical and chemical features of the CoPC identified, the exposure pathways that may be applicable to each CoPC at the Site are presented in Table 7.2.

Table 7.2 CoPC and applicable exposure pathways

CoPC	Applicable pathways
Asbestos	ii
TRH/BTEXN	i, iii, iv, v, vi, vii, viii
PAHs	i, iii, iv, v, vi, vii, viii
VOCs/SVOCs	i, iii, iv, v, vi, vii, viii
Formaldehyde	i, ii, iii, iv, v, vi, vii, viii
Heavy metals	i, ii, iii, vii, viii
Nutrients	vii, viii
OCPs/OPPs	i, ii, iii, iv, v, vi, vii, viii
Phenols	i, ii, iii, iv, v, vi, vii, viii
PFAS and surfactants	i, iii, vii, viii
UXO	i

7.2 Preliminary qualitative risk assessment methodology

EMM has quantified potential contamination risks using a risk assessment matrix. Each identified contamination issue was assessed in terms of the potential consequence for redevelopment and future use of the Site, using the matrix of consequences and likelihoods in Table 7.3. This information was subsequently used to inform the preliminary CSM and preliminary risk assessment in Table 7.4.

Table 7.3 Preliminary qualitative risk assessment matrix

Consequence	Likelihood of soil, surface water or groundwater contamination to be present				
	Rare (1) - Very unlikely at concentrations above the relevant assessment criteria and limited in extent	**Unlikely (2) -** Potentially present at concentrations above the relevant assessment criteria and limited in extent	**Possible (3) -** Potentially present at concentrations above the relevant assessment criteria and widespread	**Likely (4) -** Most likely present at concentrations above the relevant assessment criteria and widespread	**Almost certain (5)** - Known to be present at concentrations above the relevant assessment criteria and widespread
Insignificant (1) - No or highly unlikely exposure pathway for human or ecological receptors under proposed redevelopment and future land use^	Low 1	Low 2	Low 3	Low 4	Moderate 5
Minor (2) - Unlikely exposure pathway for human or ecological receptors under proposed redevelopment and future land use ^	Low 2	Low 4	Low 6	Moderate 8	Moderate 10
Moderate (3) - Exposure pathway for human or ecological receptors may be present and complete under proposed redevelopment and future land use ^	Low 3	Low 6	Moderate 9	Moderate 12	High 15
High (4) - Exposure pathway for human or ecological receptors likely to be present and complete under proposed redevelopment and future land use ^	Low 4	Moderate 8	Moderate 12	High 16	High 20
Significant (5) - Exposure pathway for human or ecological receptors present and are considered complete under redevelopment and future land use ^	Moderate 5	Moderate 10	High 15	High 20	High 25

^ Without further investigation or implementation of appropriate management controls as outlined in Section 8.3.

7.3 Receptors

A preliminary CSM has been developed to identify existing known sources and areas of contamination, associated potential impacts to human health and ecological receptors and to identify exposure source-pathway-receptor (S-P-R) linkages. Typical receptors of the Site would include:

- current and future Site users including visitors, maintenance and office workers;
- future project construction workers;
- users and occupants of adjoining land;
- users of surface water downgradient from the Site; and
- ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems.

The preliminary CSM is presented in Table 7.4.

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
USTs and associated infrastructure	BTEXN, TRH, ACM, heavy metals	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust and/or fibres • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of impacted soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – the presence of three fuel bowsers and vent pipes to the north-west of Building 14 indicate the presence of three USTs used for petroleum storage. As no known records exist pertaining to the USTs (including maintenance records), the condition of the USTs is unknown, however the bowsers appear to be old and are in poor condition. Given the estimated age of the bowsers, ACM may be present in components of the UPSS and associated infrastructure. Contamination may have resulted from spills associated with the use of the UPSSs or from leaks resulting from deterioration of the USTs. The unknown condition and location of the three potential USTs represents considerable risk to on- and off-Site receptors. The Site's position in the landscape means that migration of any contamination (if present) off-Site is likely to occur readily and has potential to be widespread.	Moderate 12

[14] The contamination risk level is based on a tier-one preliminary qualitative risk assessment matrix as outlined in Section 7.2.

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Hazardous building materials notably ACM, SMF and lead.	ACM, heavy metals	Exposure: • Dermal contact (metals) or incidental ingestion of soil • Inhalation of dust and/or fibres • Dermal contact and incidental ingestion of groundwater/surface water (metals) • Plant uptake and/or ingestion of metals by animals (including aquatic flora and fauna) • Uptake of CoPC (metals) from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater (metals) • Groundwater transport (metals) • Aeolian (windblown) transport of dust and fibres • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Likely/known – ACM and other hazardous building materials have been identified within each of the buildings located within the Site as documented in the Hazardous Materials Register (Hazmat Services, 2022). Any historical conduits, service pipes or waste fill material may also contain bonded or friable asbestos. Lead may also be present in cladding and paint. ACM and lead may also be present in soils resulting from the demolition of former buildings and services. As ACM present within the buildings is likely to be encountered as part of the planned redevelopment works, this represents a complete S-P-R linkage. Additional S-P-R linkages may potentially become complete if ACM and/or lead in soils is disturbed as part of the redevelopment works. If lead contamination is present at the Site, the contamination has potential to migrate off-Site.	Moderate 12

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Chemical storage	BTEXN, TRH, PAHs, heavy metals, phenols, VOCs, ACM, OCPs, OPPs, formaldehyde, nutrients	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust and/or fibres • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – Building 14 formerly housed the shower block, laundry and boiler room in addition to various storage areas all of which may have stored various chemicals. Additionally, the laundry is currently used as a storage area/maintenance workshop for gardening equipment. At the time of inspection, several 20 L petrol and oil drums were observed here with a strong hydrocarbon odour being noted. A 20 L drum of BL10-B Turbo Truckwash was also identified during the Site inspection. Whilst Building 14 represents a bunded area, there is still potential for spills and leaks to enter the environment over time if not correctly managed. Additionally, improper storage and management of chemicals may represent a potentially complete S-P-R linkage for current users of the Site and future construction workers.	Low 6

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Kitchen and wastes	Oil and grease, surfactants, nutrients	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – whilst the Café in Building 22 was unable to be inspected, it is understood that it houses a fully functioning kitchen including a 1000 L grease trap. Contamination may result from overtopping of the grease trap or from leaks however the latter is unlikely due to the age of the building. At the time of inspection, a large 20 L plastic drums containing what appeared to be used cooking oil were observed in an outdoor area to the west of Building 14. Contamination may result from leaks forming due to deterioration, spills during handling or from oily residue on the exterior if the drums. Potentially complete S-P-R linkages may form during planned construction work as part of the redevelopment of the Site. Additionally, the location of the potential used cooking oil has significant potential for off-Site migration of potential contaminants.	Moderate 12

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Wastewater cooling pit	Nutrients, formaldehyde, OCPs, OPPs	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Unlikely – it is understood that the large pit located north-west of Building 14 was used to cool untreated wastewater from the laundry, prior to discharge into the sewer. Contamination may be present downgradient of the pit resulting from overtopping of the pi although this would be considered unlikely if proper management procedures were observed. As the area surrounding the pit is not bunded, any potential contamination would be able to readily migrate off-Site. Additionally, S-P-R linkages may potentially become complete during planned redevelopment works.	Low 6

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Firefighting training	PFAS and surfactants	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – it is understood that the Gaol relied on the local Fire Brigade. Firefighting training is known to have occurred off-Site at the Gaol however as no formal records exist, firefighting training may have also been undertaken within the Site.. S-P-R linkages have potential to become complete under the planned redevelopment works. Additionally, PFAS are highly mobile compounds and if used historically at the Site, have potential to be widespread on- and off-Site.	Moderate 12

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Generator operation	BTEXN, TRH, PAHs, VOCs, heavy metals, SVOCs, phenols, ACM	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust and/or fibres • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – the large generator located near Building 14 and Building 22 was in a visible state of deterioration at the time of inspection. Whilst the generator is situated on a concrete hardstand, the state of the hardstand and whether it acts as a bund is unknown. Contamination may have resulted from spills during the generators use or may be the result of deterioration of the generator itself. It is understood that the generator is to be removed as part of the proposed redevelopment works. As such, there is potential for S-P-R linkages to become complete. Furthermore, any potential contamination may migrate readily off-Site.	Moderate 12

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Potential washdown area	BTEXN, TRH, PAHs, VOCs, heavy metals, SVOCs, phenols, surfactants	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – a 20 L drum of truckwash was observed near the entrance to the basement loading dock in Building 14 during the Site inspection. The Safety Data Sheet (SDS) for the truckwash states that it contains linear alkyl benzene sulfates (LABS) which are a type of ecotoxic anionic surfactant however it is expected to readily breakdown in the environment. It should be noted that this does not preclude the use of other longer lasting compounds that may have been used historically. S-P-R linkages may potential become complete during the planned redevelopment works. Additionally, contaminants may readily migrate off-Site resulting in potential complete S-P-R linkages.	Moderate 12

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Use of fill materials	BTEXN, TRH, PAHs, heavy metals, phenols, ACM, SVOCs, PFAS	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust and/or fibres • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Aeolian (windblown) transport of dust and fibres • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Potential – it is understood that the original ground level around Building 2 and Building 3 was the same as the basement floor level and has since been built up to the first floor level. Fill is likely to have also been used elsewhere on-Site such as around Building 14 and Building 22. Potential contaminants may have been brought onto the Site as a result of this. Potential contaminants present in fill material may readily migrate off-Site or become disturbed as part of redevelopment works representing potentially complete S-P-R linkages.	Moderate 12

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
UXO	UXO and associated chemicals	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Unlikely – whilst the Site has been identified as being within the Maitland UXO area, the risk of UXO is related to the use of Maitland as a military training area during WWII. As the Gaol remained in operation throughout the War, the risk of UXO being present at the Site is considered unlikely. If UXO is present at the Site, there is potential for S-P-R linkages to become compete during redevelopment works. Additionally, chemicals present within deteriorating UXO may have migrated off-Site representing potentially complete S-P-R linkages.	Low 3

Table 7.4 Preliminary conceptual Site model

Source	CoPC	Potential exposure and migration pathways	Receptor	Potential for complete S-P-R linkage	Tier 1 preliminary risk assessment[14]
Main Northern Railway	BTEXN, TRH, PAHs, heavy metals, phenols, ACM, SVOCs	Exposure: • Dermal contact or incidental ingestion of soil, groundwater and/or surface water • Inhalation of dust and/or fibres • Inhalation of soil/groundwater vapours in indoor/outdoor air and/or vapours within a trench • Plant uptake and/or ingestion by animals (including aquatic flora and fauna) • Uptake of CoPC from groundwater (stygofauna and microorganisms) Migration: • Surface water runoff • Vertical leaching by rainwater • Groundwater transport • Aeolian (windblown) transport of dust and fibres • Excavation and relocation of soils as part of redevelopment works	• Current and future Site users • Future project construction workers • Users and occupants of adjoining land • Users of surface water downgradient from the Site • Ecological receptors, including agricultural receptors, and terrestrial, groundwater and aquatic ecosystems	Unlikely – whilst the Main Northern Railway is located approximately 110 m to the west of the Site, the risk of CoPC migrating to the Site is considered negligible due to the Railway being situated downgradient from the Site.	Low 1

8 Conclusions and recommendations

The majority of the Site is understood to have been occupied by the Gaol since the late 19th century with some agricultural land use along the north-west boundary up until the 1970s. The layout of the Site has changed over time with Building 2 – Lieutenant Governor's Residence and Building 3 – Governor's Residence both being constructed as part of the original Gaol in the 1870s. Building 14 – Stores & Work Centres and Building 22 – Gaol Staff/Warden's Amenities are understood to have both been constructed in the 1970s. Based on historical aerial imagery and photographs provided by MCC, it is understood that at least two smaller buildings were present on the Site (one within the current footprint of Building 14 and one within the central courtyard area of the Site) but have since been demolished. Since the Gaol's closure in 1998, Building 22 has been converted to a café.

The Site is bounded by the remainder of the Gaol to the east, the East Maitland Courthouse and Anzac Park to the south-west and by low-density residential properties to the north and west. Further to the south-west is the Main Northern Railway with East Maitland Station being located to the west of the Site. Some agricultural properties are also located approximately 100 m north of the Site. A disused boiler room is present within the north-east section of Building 14 but is outside of the Site boundary. Whilst it is considered unlikely that the majority these historical and current land uses within the vicinity of the Site have caused significant or widespread Site contamination, activities associated with the boiler room may have historically contributed to contamination at the Site.

In addition to the four buildings subject to redevelopment as part of the Maitland Gaol Activity Hub, the Site inspection identified the presence of:

- three petrol bowsers and associated vent pipes and UPSS;
- a wastewater cooling pit;
- an industrial cooling unit;
- a large generator;
- a legionella treatment plant; and
- a water feature.

A maintenance workshop within Building 14 was visited during the Site inspection which contained garden maintenance equipment. Several 20 L fuel and oil drums were identified and a hydrocarbon odour was noted. A 20 L drum of BL10-B Turbo Truckwash was also identified near the entrance to the basement loading dock in Building 14. Several 20 L drums believed to contain used cooking oil were also observed near the generator.

The Gaol relied on the local Fire Brigade for firefighting. Firefighting training is known to have occurred off-Site at the Gaol however as no formal records exist, firefighting training may have also been undertaken within the Site.

Potential ACM was identified during the Site inspection and ACM is known to occur in all four buildings within the Site, as per the Hazardous Materials Register (Hazmat Services, 2022). No spills, stains nor gross contamination at the ground surface was observed at the ground surface.

8.1 Environmental Risk

The information inputs summarised herein identify potentially complete S-P-R linkages resulting from potential contamination at the Site. Based on the Site inspection and information reviewed as part of this PSI, any contamination present on the Site would most likely be attributed to:

- the presence of ACM in building materials;
- the presence of UPSS and associated infrastructure;
- spills and leaks from the operation and/or deterioration of a large generator;
- improper storage of chemicals including used cooking oil;
- potential firefighting training that may have historically occurred at the Site;
- potential use of the Site as a washdown area;
- use of fill which may contain ACM or other contaminants of potential concern (CoPC); and
- improper use of the wastewater cooling pit resulting in overtopping.

Key pathways include the vertical migration of CoPC through the soil profile, migration of CoPC via groundwater transport, surface water runoff and atmospheric dispersion of dust or fibres. Potential receptors include current and future land users, construction workers involved in the redevelopment works, off-Site land users and ecological receptors.

The Site's preliminary CSM identified several potential contamination sources which have a potential exposure scenario to on-Site and off-Site receptors. Key areas and contaminants around the Site have been identified as requiring further assessment through intrusive investigation to provide a quantitative assessment of the risk to receptors and the overall contamination risk and suitability of the Site for the proposed land use.

Significant and/or widespread chemical contamination of fill, soil, surface water and groundwater at the has not been identified however the presence of ACM in the buildings within the Site is noted. As such, potentially complete S-P-R linkages exist for construction workers involved in the redevelopment works.

Additionally, there are several moderate risk potential contamination sources that are unquantified and potentially complete S-P-R linkages may already exist with off-Site human and ecological receptors or may form with human receptors if no managed as part of the proposed redevelopment works.

8.2 Recommendations

A detailed site investigation (DSI) is recommended to be undertaken at the site prior to the commencement of redevelopment works to:

- further evaluate the presence of potential contamination identified in this PSI;
- ensure any potential contamination does not pose a risk to construction workers or futures users of the Site; and
- characterise material to evaluate suitability for disposal (if required).

Furthermore, it is recommended that the identified UPSS are managed in accordance with the *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*. This includes removing residual product that may be present in UST's and decommissioning by removal if the tanks have not been used for two years or longer.

Given the Site has been identified to be present within the Maitland unexploded ordinance (UXO) area further desktop assessment should be undertaken and documented in an unexpected finds protocol for future redevelopment works.

References

EMAA 2022, *Maitland Gaol Conservation Management Plan*

ESP 2015, *Maitland City Council Asbestos Register Update*

Hazmat Services 2022, *Hazardous Materials Survey: Maitland Gaol – 6-18 John Street, East Maitland (Draft version)*

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

NSW Department of Urban Affairs and Planning (DUAP) and NSW EPA 1998, *Managing Land Contamination, Planning Guidelines SEPP 55-Remediation of Land*

NSW EPA 2015, *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997*

NSW EPA 2017, *Guidelines for the NSW Site Auditor Scheme* (3rd edition)

NSW EPA 2020, *Guidelines for consultants reporting on contaminated land: Contaminated land guidelines*

Premier One Products Pty Ltd 2021, *Safety Data Sheet BL10B Truckwash*, November 2021

Safe Work Australia 2018, *Workplace Exposure Standards for Airborne Contaminants*, 27 April 2018

Appendix A
Database search results

EMM
creating opportunities

A.1 Appendix A: Database search results

Land Insight

Due Diligence Insight Report

Maitland Gaol
6-18 John Street Maitland, NSW

8 December 2022

Report nº:
LI-3132 DDR

Understanding your report

Your Report has been produced by Land Insight and Resources (Land Insight).

Your Report is based on information available from public databases and sources at the date of reporting. The information gathered relates to land that is within a 200 to 2000m radius (buffer zone) from the boundaries of the Property. A smaller or larger radius may be applied for certain records (as listed under records and as shown in report maps).

While every effort is made to ensure the details in your Report are correct, Land Insight cannot guarantee the accuracy or completeness of the information or data provided.

The report provided by Land Insight includes data listed on page 4 (table of contents). All sources of data and definitions are provided in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact info@landinsight.co

The report does not include title searches; dangerous good searches or; property certificates (unless requested); or information derived from a physical inspection, such as hazardous building materials, areas of infilling or dumping/spilling of potentially contaminated materials. It is important to note that these documents and an inspection can contain information relevant to contamination that may not be identified by this Report.

Due to the ongoing nature of database development and frequency of updates provided by various state government regulators the data displayed within this report is only current from date of production.

This Report, and your use of it, is regulated by Land Insight's Terms and Conditions (See Land Insight's Product Guide).

Index

SUMMARY

Section 1	**PROPERTY SETTING**	**Identified**
Sensitive Receptors Planning Control Heritage Soil and Land Information Geology and Topography		

Section 2	**HYDROGEOLOGY**	**Identified**
Aquifer Groundwater Bores and Other Borehole investigations Groundwater Dependent Ecosystems (GDE) Hydrogeology Units Wetlands		

Section 3	**ENVIRONMENTAL REGISTERS LICENCES AND INCIDENTS**	**Identified**
Contaminated Land Public Register Sites Regulate by Other Jurisdictional Body (Former Gaswork sites / PFAS sites) Licensing and Regulated Sites National Pollutant Inventory (NPI)		

Section 4	**POTENTIALLY CONTAMINATED AREAS**	**Identified**
Former Potentially Contaminated Land Current and Historical Potentially Contaminating activities (PCA)		

Section 5	**NATURAL HAZARDS**	**Identified**
Erosion risk Bushfire prone land Fire history Flood hazards		

Section 1 Property Setting

1.1 SENSITIVE RECEPTORS

Map 1.1 (200m Buffer)

Sensitive receptor	Type	Distance (m)	Direction
Anzac Park	Parks	82.5	South-west
Maitland Grossmann High School	Education	184.4	North-east

1.2a PLANNING CONTROLS

Map 1.2a (500m Buffer)

Zoning

Zoning	Type	Details	Distance (m)	Direction
SP3	Tourist	Maitland Local Environmental Plan 2011	0.0	Onsite
R1	General Residential		0.0	Adjacent
RE1	Public Recreation		25.4	South-west
SP1	Special Activities		25.4	South-west
SP2	Infrastructure		63.4	North-west
RU1	Primary Production		86.7	North-west
B4	Mixed Use		164.4	West
B2	Local Centre		289.5	South
RE2	Private Recreation		467.3	South-west

1.2b PLANNING OVERLAYS

Map 1.2b (500m Buffer)

Environmental Planning Instruments

Name	Type	Details	Distance (m)	Direction
Coal Seam Gas Exclusions	State Environmental Planning Policy	State Environmental Planning Policy (Resources and Energy) 2021	0.0	Onsite
Strategic Agricultural Land			86.4	North

Other Planning Information

Name	Category	Details	Distance (m)	Direction
-	-	-	-	-

1.3 HERITAGE

Map 1.3 (200m Buffer)

State and Local Heritage Registers

Site ID	Site Name	Type	Details	Distance (m)	Direction
C3	East Maitland Heritage Conservation Area	Heritage	Conservation Area - General	0.0	Onsite
I52	Maitland Correctional Centre	Heritage	Item - General	0.0	Onsite
I49	Courthouse Parklands	Heritage	Item - General	23.0	South-west
I50	Courthouse	Heritage	Item - General	23.0	South-west
I51	Police station	Heritage	Item - General	25.9	North-west
I65	Nenagh	Heritage	Item - General	27.3	North-east
I53	House	Heritage	Item - General	39.1	South-east
I119	Government Railway	Heritage	Item - General	72.7	West
I31	Former Post Office & Stables	Heritage	Item - General	151.1	South-west
I73	Hillside	Heritage	Item - General	176.8	North-east
1296	Maitland Correctional Centre	State Heritage Inventory	Complex / Group	0.0	Onsite
1016	Police Station (East Maitland)	State Heritage Inventory	Built	25.0	North-west
1135	East Maitland Railway Station group	State Heritage Inventory	Complex / Group	73.1	West
494	Post Office & Stables (former)	State Heritage Inventory	Built	152.2	South-west

Australian Heritage Database Register

Site ID	Site Name	Type	Details	Distance (m)	Direction
Not identified	-	-	-	-	-

Commonwealth Heritage List, National Heritage List and World Heritage Area.

1.4a SOIL AND LAND USE INFORMATION

Map 1.4a (500m Buffer)

Soil Landscape

Code	Soil Landscape	Soil Group	Description	Distance (m)	Direction
REbe	Beresfield	Residual	Landscape—undulating low hills and rises on Permian sediments in the East Maitland Hills region. Slope gradients 3–15%, local relief to 50 m, elevation is 20–50 m. Partially cleared tall open-forest. Landscape Variant—bea—steeper upper slopes (15–<25%). Soils—moderately deep (<120 cm), moderately well to imperfectly drained Yellow Podzolic Soils (Dy2.21), Brown Podzolic Soils (Db1.21) and brown Soloths (Db2.41) occur on crests with moderately deep (<120 cm), well-drained Red Podzolic Soils (Dr2.21) and red Soloths (Dr2.41) on upper slopes, moderately well to imperfectly drained brown Soloths (Db2.41, Db1.41) and yellow Soloths (Dy3.41) on sideslopes and deep (>200 cm), imperfectly to poorly drained Yellow Podzolic Soils (Dy2.21), yellow Soloths (Dy2.41, Dy3.41) and Gleyed Podzolic Soils (Dg2.41) on lower slopes. Qualities and Limitations—high foundation hazard, water erosion hazard, Mine Subsidence District, seasonal waterlogging and high run-on on localised lower slopes, highly acid soils of low fertility.	0.0	Onsite
ALhu	Hunter	Alluvial	This soil landscape covers the floodplains of the Hunter River and its tributaries. The main soils are all formed in alluvium. They include Brown Clays and Black Earths (Ug5.34, Ug5.17) on prior stream channels and on tributary flats, with Chernozems (Uf5.1) on prior stream channels adjacent to Dartbrook and Brays Hill soil landscapes and in many of the valleys such as Martindale and Widden. Alluvial Soils (loams – Um5 and sands – Um5.52, Um6.1, Uc) occur on levees and flats adjacent to the present river channel. Red Podzolic Soils and Lateritic Podzolic Soils (Dr2.11, Db2.41) are located on old terraces, with Non-calcic Brown Soils (Db1.13) and Yellow Solodic Soils in some drainage lines.	100.2	North-west
REri	Rivermead	Residual	Landscape—moderately broad to extensive, level to gently undulating alluvial terraces in the Hunter Plain and Paterson Mountains regions. Slope 0–4%, elevation is 5–20 m, local relief is 5–10 m. Cleared tall open-forest. Soils—deep (>200 cm), well-drained Yellow Earths (Gn2.41, Gn2.42) and Red Earths (Gn2.15, Gn2.44) and shallow (<35 cm) to deep (>200 cm), moderately well to imperfectly drained Brown Podzolic Soils (Db1.21), with some Chocolate Soils (Db3.11) and deep (>130 cm), moderately well-drained Brown Clays (Ug5.16). Qualities and Limitations—high foundation hazard, localised flood hazard, seasonal waterlogging on imperfectly drained terraces.	301.8	North-west

Salinity

Salinity Hazard	Type	Details	Distance (m)	Direction
-	-	-	-	-

Radon

Radon Level (Bq/m³)	Distance (m)	Direction
8	0.0	Onsite

Typical radon levels in Australia are low and the values shown are the average values for each census district. For specific location, factors such as the local geology and house type could lead to different values. (ARPANSA).

1.4b ACID SULFATE SOIL

Map 1.4b (500m Buffer)

State and Local Acid Sulfate Soil Registers

Name	Classification	Description	Distance (m)	Direction
Class 5	Acid Sulfate Soils	Acid sulfate soils are not typically found in Class 5 areas. Areas classified as Class 5 are located within 500 metres on adjacent class 1,2,3 or 4 land. | Development consent requirement: Works within 500 metres of adjacent Class 1, 2a, 2b, 3 or 4 land that is below 5 metres Australian Height Datum and by which the watertable is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2a, 2b, 3 or 4 land.	0.0	Onsite
Class 4		Acid sulfate soils in a class 4 area are likely to be found beyond 2 metres below the natural ground surface. | Development consent requirement: Works more than 2 metres below the natural ground surface. Works by which the watertable is likely to be lowered more than 2 metres below the natural ground surface.	104.6	North-west

To ensure that development does not disturb, expose or drain acid sulfate soils and cause environmental damage, development consent may be required for the carrying out of works within areas and land shown on the Acid Sulfate Soils Map.

National Acid Sulfate Soil Register

Name	Classification	Description	Distance (m)	Direction
Bn(p4)	ASS in inland lakes, waterways, wetlands and riparian zones	Low Probability of occurrence	0.0	Onsite
Ag(p-)	ASS in floodplains	High Probability of occurrence	104.6	North-west

Source: ASRIS Atlas of Australian Sulfate Soils (CSIRO). Acid Sulfate Soils (ASS) are all those soils in which sulfuric acid may be produced, is being produced, or has been produced in amounts that have a lasting effect on main soil characteristics.

1.5 GEOLOGY AND TOPOGRAPHY

Map 1.5 (500m Buffer)

Geology

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
Newcastle Coalfield 100K, modified by Lower NE RFA	Pto	<Null>	Lopingian	Tomago Coal Measures	Sandstone	Very fine- to medium-grained grey lithic sandstone, (sporadically interbedded with) laminated to carbonaceous shale and mudstone, siltstone, coal with	0.0	Onsite

Map Sheet	Code	Formation	Age	Group	Dominant Lithology	Description	Distance (m)	Direction
						sporadic interbeds of carbonaceous shale, claystone, sideritic bands, rare pebble paraconglomerate		
	QH_af	Alluvial floodplain deposits	Holocene	Alluvial floodplain deposits	Clastic sediment	Silt, very fine- to medium-grained lithic to quartz-rich sand, clay.	70.2	North-west
	QP_at	Alluvial terrace deposits	Holocene	Alluvial terrace deposits	Clastic sediment	Silt, clay, (fluvially-deposited) fine- to medium-grained quartz-lithic sand, polymictic gravel.	122.4	North-west

Naturally Occurring Asbestos Potential (NOA)

Category	On the Property?	Within Buffer?
Not identified	-	-

Topography

Topography (onsite)	14-30 mAHD

Section 2 Hydrogeology

2.1 HYDROGEOLOGY AND GROUNDWATER BORES

Map 2.1 (2000m Buffer)

	On the Property?	Within Buffer?
Aquifer Type	Porous, extensive highly productive aquifers	Porous, extensive highly productive aquifers
Drinking Water Catchments	Not identified	Not identified
Protected Riparian Corridor	Not identified	Hunter River Wallis Creek
UPSS Environmentally Sensitive Zone	Hunter River	Hunter River
Wetlands	Not identified	Estuarine Wetland

Groundwater Bores

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
26	GW019629	Unknown	1/03/1963	<Null>	6.1	<Null>	<Null>	<Null>	782.0	North-west
25	GW065476	Irrigated agriculture	1/01/1987	<Null>	13.0	<Null>	<Null>	<Null>	1003.8	West
11	GW202610	Monitoring	23/05/2012	0.0	6.0	6.18	<Null>	<Null>	1041.4	South-west
12	GW202609	Monitoring	22/05/2012	0.0	12.5	7.77	<Null>	<Null>	1043.5	South-west
10	GW202608	Monitoring	22/05/2012	0.0	7.5	5.63	<Null>	<Null>	1044.0	South-west
27	GW201107	Irrigated agriculture	1/07/1987	13.0	13.0	6	<Null>	7	1045.7	West
7	GW203477	Irrigation	1/01/1980	0.0	6.5	5	<Null>	<Null>	1052.5	North-west

Map ID	Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL (m)	Salinity (mg/l)	Yield (L/s)	Distance (m)	Direction
9	GW202611	Monitoring	23/05/2012	10.0	10.0	5.51	<Null>	<Null>	1062.0	South-west
4	GW202612	Monitoring	24/05/2012	7.0	7.0	4.24	<Null>	<Null>	1068.0	South-west
5	GW202613	Monitoring	24/05/2012	6.0	6.0	4.45	<Null>	<Null>	1099.0	South-west
6	GW202614	Monitoring	24/05/2012	0.0	9.5	4.71	<Null>	<Null>	1100.4	South-west
2	GW202476	Monitoring	25/05/2012	4.0	4.0	1.06	<Null>	<Null>	1133.4	South-west
3	GW202477	Monitoring	25/05/2012	6.0	6.0	2.71	<Null>	<Null>	1183.1	South-west
1	GW068666	Monitoring	<Null>	12.5	<Null>	6	<Null>	<Null>	1218.7	West
22	GW078839	Monitoring	21/07/1993	23.7	23.7	9.69	<Null>	0.5	1521.2	South-east
23	GW078838	Monitoring	20/07/1993	26.7	26.7	13.83	<Null>	0.2	1601.9	South-east
24	GW078842	Monitoring	18/07/1996	24.0	24.0	83	<Null>	<Null>	1611.4	South-east
18	GW078841	Monitoring	18/07/1996	29.6	29.6	85	<Null>	<Null>	1673.1	South-east
19	GW078840	Monitoring	22/07/1993	32.8	32.8	17.02	<Null>	0.7	1783.8	South-east
8	GW202163	Irrigation,stock	3/03/2008	12.0	12.0	5.5	Good	3	1806.6	North
16	GW047691	Irrigated agriculture	1/05/1980	10.5	10.5	<Null>	<Null>	<Null>	1813.5	West
17	GW014307	Irrigated agriculture	1/10/1956	9.1	9.1	2.9	<Null>	1.263	1833.2	North-west
13	GW027203	Irrigated agriculture	1/05/1967	9.1	9.1	3.7	<Null>	<Null>	1893.6	North-west
21	GW078843	Monitoring	14/11/1996	11.2	11.2	<Null>	<Null>	<Null>	1909.4	South-east
20	GW078844	Monitoring	15/11/1996	24	24	18.99	<Null>	<Null>	1923.3	South-east
15	GW053069	Irrigated agriculture	<Null>	13	12	9	Poor	<Null>	1924.3	North-east
14	GW029701	Unknown	<Null>	10.4	10.4	3.7	<Null>	<Null>	1935.6	North-east

Groundwater Bores Driller Lithology Details

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
GW019629	#N/A	782.0	North-west
GW065476	#N/A	1003.8	West
GW202610	#N/A	1041.4	South-west
GW202609	#N/A	1043.5	South-west
GW202608	#N/A	1044.0	South-west
GW201107	#N/A	1045.7	West
GW203477	#N/A	1052.5	North-west
GW202611	#N/A	1062.0	South-west
GW202612	#N/A	1068.0	South-west
GW202613	#N/A	1099.0	South-west
GW202614	#N/A	1100.4	South-west
GW202476	#N/A	1133.4	South-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
GW202477	#N/A	1183.1	South-west
GW068666	0m-1m Top soil 4m-6m Heavy clay 6m-12m Water bearing sand & gravel	1218.7	West
GW078839	0m-1m Fill material 1m-4m Clay/shale, cream, plastic 4m-8m Shale, dark grey 8m-10m Sandstone, grey, fine 10m-15.5m Siltstone, grey, fine 15.5m-16m Coal, black 16m-20m Shale, brown to light brown 20m-22m Sandstone, grey, medium 22m-22.5m Coal, black 22.5m-23.3m Sandstone, grey, medium 23.3m-23.7m Siltstone, grey, fine	1521.2	South-east
GW078838	0m-0.5m Topsoil, clayey 0.5m-3.5m Sandstone, yellow with iron stains 3.5m-5m Shale/siltstone, dark grey, fine, laminitic 5m-6.5m Sandstone, yellow orange 6.5m-6.8m Coal 6.8m-9m Shale/claystone, grey 9m-10m Siltstone, light grey 10m-20m Shale, grey to dark grey 20m-26.7m Sandstone, grey, hard, carbonaceous	1601.9	South-east
GW078842	0m-0.1m Fill 0.1m-3m Clay 3m-8.5m Claystone 8.5m-9m Coal 9m-14.5m Siltstone 14.5m-17.8m Sandstone 17.8m-22.5m Mudstone 22.5m-24m Coal/mudstone	1611.4	South-east
GW078841	0m-1.2m Silty clay 1.2m-2.5m Clay 2.5m-3m Clay 3m-4m Clay 4m-9.8m Siltstone 9.8m-10.3m Coal 10.3m-14.5m Claystone 14.5m-14.6m Coal 14.6m-15m Clay 15m-17.5m Siltstone 17.5m-23.5m Siltstone 23.5m-29.5m Coal 29.5m-29.6m Clay	1673.1	South-east
GW078840	0m-2.5m Clay, grey brown 2.5m-4.7m Siltstone, cream, soft 4.7m-5.2m Coal, black 5.2m-5.5m Siltstone/claystone 5.5m-6.5m Shale, dark grey, carbonaceous 6.5m-8m Sandstone, light grey 8m-9m Shale, grey 9m-10.5m Siltstone, grey 10.5m-11.5m Shale, grey 11.5m-17m Siltstone, grey, layared 17m-22m Sandstone, brown grey 22m-28.5m Coal, black 28.5m-29m Sandstone, grey 29m-30.5m Coal, black, hard 30.5m-32m Siltstone, grey 32m-32.8m Coal	1783.8	South-east
GW202163	#N/A	1806.6	North
GW047691	0m-2m Topsoil 2m-6m Soil clay 6m-10.5m Gravel	1813.5	West
GW014307	0m-2.74m Silt sandy 2.74m-5.18m Soil black	1833.2	North-west

Groundwater Bore ID	From Depth – To Depth (m) Lithology	Distance (m)	Direction
	5.18m-6.4m Clay 6.4m-9.14m Sand water supply		
GW027203	0m-3.05m Soil 3.05m-4.88m Mud black 4.88m-9.14m Sand water bearing	1893.6	North-west
GW078843	0m-4m Fill 4m-5m Silty clay 5m-7.5m Silty clay 7.5m-10m Siltstone 10m-11.2m Silty clay	1909.4	South-east
GW078844	0m-1m Fill 1m-3m Silty clay 3m-5m Silty clay 5m-6m Sandstone 6m-10m Siltstone 10m-15m Sandstone 15m-19m Siltstone 19m-24m Coal	1923.3	South-east
GW053069	0m-2m Topsoil 2m-4m Soil black 4m-9m Mud 9m-12m Gravel water supply 12m-13m Mud	1924.3	North-east
GW029701	0m-3.05m Soil 3.05m-7.32m Clay cryptocrystalline 7.32m-10.36m Sand coarse water bearing	1935.6	North-east

2.2 HYDROGEOLOGY AND OTHER BOREHOLES

Map 2.2 (500m Buffer)

	On the Property?	Within Buffer?
Groundwater Vulnerability	Not identified	Not identified
Groundwater Exclusion Zones[1,2]	Not identified	Not identified
Hydrogeologic Unit	Palaeozoic and Pre-Cambrian Fractured Rock Aquifers (low permeability)	Surficial Sediment Aquifer (porous media - unconsolidated) Palaeozoic and Pre-Cambrian Fractured Rock Aquifers (low permeability)

[1] - *Botany Groundwater Management Zones (BGMZ): Zone 1 – the use of groundwater remains banned; Zones 2 to 4 – domestic groundwater use is banned, especially for drinking water, watering gardens, washing windows and cars, bathing, or to fill swimming pools.*

[2] - *Williamtown Groundwater Management Zones (WGMZ): Primary Management Zone – this area has significantly higher levels of PFAS detected and therefore, the strongest advice applies. Secondary Management Zone – this area has some detected levels of PFAS; Broader Management Zone – the topography and hydrology of the area means PFAS detections could occur now and into the future.*

Groundwater Dependent Ecosystems (GDE)

	On the Property?	Within Buffer?
Aquatic (Surface)	Not identified	Not identified
Terrestrial (Subsurface)	Not identified	Not identified

Aquatic - Ecosystems that rely on the Surface expression of groundwater.
Terrestrial - Ecosystems that rely on the Subsurface expression of groundwater.

Other Known Borehole Investigations (Coal Seam Gas (CSG), Petroleum Wells and Other Boreholes)

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
28197	Mineral Exploration	EAST MAITLAND GAOL	NSW Mines Department	01/01/1885	227.3	18.0	South-east
COAL_DMEM GAOLD1	Mineral Exploration	DPI Minerals Borehole Register - Department Of Mineral Resources,	Department Of Mineral Resources,		227.3	18.7	South-east
GT0001772	Intrusive Investigation	A collection of NSW geotechnical reports as part of the NSW Government Geotechnical Report Database Project (GGRD).	Drilling, Soil Sample Analysis located at Maitland Gaol geotechnical investigation - Geotechnical Centre - 18 April 1		0.0	37.2	West
TP118	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.8	284.7	North-west
TP117	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		2.2	296.8	North-west
TP207	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	303.5	North-west
BH209	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		22.4	308.0	North-west
CPTu209	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.9	308.9	North-west
CPTu213	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		18.0	309.2	North-west
CPTu212	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		20.8	310.0	North-west
TP212	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.8	313.1	North-west
TP208	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.8	314.1	North-west
CPTu211	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		14.4	314.7	North-west
TP206	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	315.2	North-west
TP209	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.1	316.8	North-west
CPTu207	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.6	321.5	North-west
CPTu210	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		9.4	324.8	North-west
BH208	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		23.3	334.2	North-west

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
TP211	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		0.9	335.9	North-west
CPTu208	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		17.7	336.2	North-west
TP205	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	337.3	North-west
BH206	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		26.3	345.1	North-west
CPTu206	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		17.3	345.1	North-west
TP116	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		2.2	350.1	North-west
ABH7	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		25.5	353.1	North-west
TP204	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	357.6	North-west
BH205	Borehole	Proposed Bridge over Northern Railway Maitland	RMS		17.0	358.8	West
CPTu205	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		17.2	360.1	West
ABH6	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		30.0	363.7	North-west
CPT03	Intrusive Investigation	Proposed Hunter River Crossing, Elizabeth St East Maitland	RMS	12/01/2007	17.7	368.3	North-west
CPT02	Intrusive Investigation	Proposed Hunter River Crossing, Elizabeth St East Maitland	RMS	12/01/2007	20.0	372.7	North-west
TP210	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	372.9	North
TP203	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	373.8	West
CPTu203	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		16.4	376.1	West
ABH5	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		33.0	379.3	North-west
CPT01	Intrusive Investigation	Proposed Hunter River Crossing, Elizabeth St East Maitland	RMS	12/01/2007	10.0	383.1	West
TP106A	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.1	383.4	North-west
TP106B	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.1	383.4	North-west

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
TP217	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.8	386.3	West
TP218	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.0	386.5	West
TP112	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		5.0	391.0	West
TP105	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.0	394.1	West
ABH4	Borehole	Proposed MR101 - Third Hunter River Crossing between Melbourne St and Pitnacree Rd	RMS		6.6	403.8	West
TP119	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.9	404.1	North
TP111	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		2.1	406.0	West
TP215	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		1.1	406.6	West
TP214	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		0.9	407.6	West
TP216	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		0.9	408.0	West
CPTu204	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.8	411.0	West
TP201	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.0	413.0	West
TP113	Test Pit	Proposed 3rd Hunter River Crossing Investigation	RMS		1.4	414.7	West
CPTu201	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.4	416.1	West
TP202	Test Pit	Proposed Bridge over Northern Railway Maitland	RMS		3.1	417.9	West
CPTu202	Intrusive Investigation	Proposed Bridge over Northern Railway - Pitnacree Road East Maitland	RMS		15.6	437.4	North-west

Section 3 Environmental Registers, Licences and Incidents

3.1 CONTAMINATED LAND PUBLIC REGISTER

Map 3.1 (1000m Buffer)

Contaminated Sites

Register Type	Site Name	Address	Description	Details	Distance (m)	Direction
EPA Notified Contaminated Sites	Caltex East Maitland Service Station	Newcastle Road, Corner William STREET EAST MAITLAND	Service Station	Regulation under CLM Act not required	687.3	South-west
EPA Notified Contaminated Sites	United Service Station East Maitland	164 (also known as 250) Newcastle Street, EAST MAITLAND	Service Station	Regulation under CLM Act not required	722.7	South
EPA Notified Contaminated Sites	Former Gasworks Site	Corner Melbourne Street and Brisbane Street, EAST MAITLAND	Gasworks	Regulation under CLM Act not required	999.0	South-west
EPA Record of Notices	Former Gasworks Site	Corner Melbourne Street and Brisbane Street, EAST MAITLAND	Gasworks	Notices relating to this site (2 former)	999.0	South-west

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Table 3.1.1 Contaminated Land Public Register		
State	**Regulatory Body**	**Information included in this search (by state)**
ACT	EPA (Environment Protection Authority)	Contaminated Land Search Register of Contaminated Sites
NSW	EPA (Environment Protection Authority)	Sites Notified as Contaminated

Table 3.1.1 Contaminated Land Public Register		
		Records of Notices
NT	EPA (Environment Protection Authority)	Contaminated Land Audit Pollution Abatement Notice
QLD	DES (Department of Environment and Science)	Environmental Management Register (EMR) Contaminated Land Register (CLR)
SA	EPA (Environment Protection Authority)	Site Contamination Index
TAS	EPA (Environment Protection Authority)	Regulated Sites and Premises Lutana and Parts of Hobarts Eastern Shore
VIC	EPA (Environment Protection Authority)	Priority Sites Register Pollution Abatement Notice
WA	DWER (Department of Water and Environmental Regulation)	Contaminated Sites Database

This search contains information retrieved from the relevant state authority, agency/department, or government authority that notifies and identifies contaminated land. The list only contains contaminated sites that the regulatory body is aware of or that have been notified by owners or occupiers as contaminated land. The sites are recorded on the register at various stages of the assessment and/or remediation process. If a site is not on the list, it does not necessarily mean the site is not contaminated.

3.2 LICENCES, APPROVALS & ASSESSMENTS

Map 3.2 (500m Buffer)

Licences

Licence N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direct
3957	No longer in force	FORESTRY CORPORATION OF NEW SOUTH WALES	Lower North East Region (L.N.E.R) Means State Forests And Crown - Timber Lands (ex. Plantations)	WITHIN THE L.N.E.R. SHOWN ON MAP 1 TO THE NSW L.N.E.R. FOREST AGREEMENT GRANTED ON THE 5 MARCH 1999, KEMPSEY, NSW 2440	Logging operations	0.0	Not mapped
4017	No longer in force	FORESTRY CORPORATION OF NEW SOUTH WALES	Upper North East Region (L.N.E.R) Means State Forests And Crown - Timber Lands (ex. Plantations)	WITHIN THE U.N.E.R. SHOWN ON MAP 1 TO THE NSW U.N.E.R. FOREST AGREEMENT GRANTED ON THE 5 MARCH 1999., COFFS HARBOUR, NSW 2450	Logging operations	0.0	Not mapped
12439	Surrendered	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	STATE OF NEW SOUTH WALES (Department of Primary Industries - Lands)	Other activities	0.0	Not mapped

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

** Not mapped – Licences that are applied to larger areas and/or without specific definition; such as waterways, forests etc will still be identified in the search results but will not be show within the map.*

Audits

N°	Type	Licence holder	Location Name	Premise Address	Activity	Dist. (m)*	Direction
-	Not identified	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

Clean Up, Penalty Notices and Orders

N°	Type	Licence holder	Location Name	Premise Address	Details	Dist. (m)*	Direction
-	-	-	-	-	-	-	-

If the record does not contain a complete street address and/or cannot be located, the records' geographic location will be approximated and reported as being within the surrounding area.

3.3a SITES REGULATED BY OTHER JURISDICTIONAL BODY

Map 3.3a (2000m Buffer)

Contaminated Legacy Areas

Site Name	Description	Distance (m)	Direction
Not identified	-	-	-

Includes known contaminated areas such as James Hardies Asbestos waste legacy areas, Pasminco Smelter and Uranium processing site.

Defence, Military Sites and UXO Areas

Site name	Type*	Details	Distance (m)	Direction
Maitland	Unexploded Ordnance (UXO)	This site was used for Military Training and Camps during WWII.	0.0	Onsite

**RCIP (Regional Contamination Investigation Program). UXO (Unexploded Ordnance Areas)*

Former Gasworks Sites

Site name	Description	Distance (m)	Direction
Former Gaswork	Although both Tuck and the Maitland Gas Company were authorised to supply East and West Maitland with gas, a municipal works was commenced in East Maitland in 1887. Dissatisfaction with the performance of the East Maitland gasworks led the council, in 1911, to seek the expert advice of J. McKenzie, engineer to the Newcastle Gas Company, as well as opinions from other gas enterprises in New South Wales. All agreed that East Maitland gasworks was old-fashioned and inefficient. Council was advised to redesign the retort benches so they could be serviced by fewer stokers; spend £1 ,000 on renewing the mains; and upgrade the street lights from flat-flame to the new incandescent burners. Seriously damaged by floods in 1949 and 1955 the East Maitland works needed to be replaced by another on higher ground. At the same time, the Maitland council undertaking wanted to take it over. At the suggestion of the state government both the Maitland works were replaced in 1960 by a new works built at Cessnock.	997.8	South-west

PFAS Sites

Site name	Description	Source	Distance (m) *	Direction
Not identified	-	-	-	-

3.3b OTHER POTENTIAL POLLUTION SOURCES

Map 3.3b (500m Buffer)

Derelict Mines and Quarries

Site name	Description	Distance (m)	Direction
Not identified	-	-	-

Historical Landfills

Site name	Description	Distance (m)	Direction
Not identified	-	-	-

National Pollutant Inventory (NPI)

Facility name	Address	Primary ANZSIC Class	Latest report	Distance (m)	Direction
Not identified	-	-	-	-	-

Section 4 Potentially Contaminated Areas

4.1 POTENTIALLY CONTAMINATING ACTIVITIES (PCA)

Map 4.1 (200m Buffer)

Industries, businesses and activities that may cause contamination

Map ID	Site name	Category	Location	Status*	Dist. (m)	Direction
3	Rail Corridor	Rail Industry and Associated Activities	East Maitland NSW 2323	Current	115.4	South-west

**Status:*
Data is current as when this report was created.
The operational status of the business is determined using the available data sources and does not indicate real-time conditions at the site.
Current: business is operating on the day this report was issued.
Former: business that have been closed or discontinued within 2 years from the date of this report.

Categories included in this search. (Notifiable activities)		
Abattoirs	Explosives and Dangerous Goods	Paint Industries
Abrasive Blasting	Extractive Industries	Petrol Stations
Agriculture / Horticulture	Fire and Rescue	Pharmaceuticals
Airports	Food Manufacturing	Port and Marina Operations
Asbestos	Foundry, Smelting or Refining	Power Plants
Asphalt or Bitumen	Fuel Terminals & Depots	Printing and Photography
Batteries	Glass, Ceramics and Plastic	Rail Industry and Associated Activities
Breweries / Distilleries	Gun, Pistol or Rifle Ranges	Rubber and Tyre
Cement, Concrete or Lime	Hospitals and Research Facilities	Storage Tanks
Cemeteries	Landfill Sites	Substations and Switching Stations
Chemicals	Livestock Dips	Textiles and Tannery
Coal Yards	Mechanical and Automotive	Timber, Pulp and Paper Works
Depots and Storage Yards	Metal Fabrication and Treatments	Waste and Recycling Facilities
Dry Cleaners	Oil and Gas	Wastewater Treatment Facilities
Electrical or Electrical Components	Other Infrastructure Facilities	-

Industries, businesses, and activities identified as having an increased likelihood of causing contamination.

The industries and business activities listed above have been identified as having an increased likelihood of causing contamination and have been identified through published state and national guidelines and regulations. These industries are noted due to their potential to store or use substances that could cause contamination to the surrounding environment if not managed appropriately. The identification of these activities does not imply the presence of contamination at the site.

The records identified are based on the reported business activity and have not been assessed based on any current or previous site inspection. Please note that records not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

4.2 HISTORICAL BUSINESS DIRECTORIES (not mapped)

1930 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

1940 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

1950 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

1965 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

1970 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Butter Factory Engineers	Greedy C J	4 Clara, East Maitland,NSW	Address	171.1	East
Builders & Contractors	Smithwaite W	77 Narang, East Maitland,NSW	Address	177.3	South-east

1980 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

1990 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

2005 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Safety Equipment & Accessories	Maitland Safety Training Services	7 John St, EAST MAITLAND,NSW,2323	Address	24.7	North-west
Painters & Decorators	Rite Price Painting Service	16 Lindesay St, MAITLAND,NSW,2320	Address	37.8	North-east
Building Contractors--Alterations & Repairs	Lantry Gary	5 Davidson St,EAST MAITLAND,NSW,2323	Address	106.0	East

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Hot Water Systems; Plumbers & Gasfitters	BRT Plumbing Pty Ltd	1 Davidson St,EAST MAITLAND,NSW,2323	Address	135.8	East

2010 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-		-

2015 Historical Business Data

Activity	Name	Address	Positional accuracy[1]	Distance (m)	Direction
Not identified	-	-	-	-	-

Land Insight uses a number of address geocoding techniques and has characterised them based on completeness (match rates) and positional accuracy. When a historical street address is incomplete or a match is not found, a record identified as being in the surrounding area will be included for reference and the accuracy of the data is approximate only. An explanation of the positional accuracy records is defined in the table below.

Historical data positional accuracy and georeferencing results explanation		
Positional accuracy	**Georeferenced**	**Description**
Address	Located to the address level	*When street address and names fully match.*
Street	Located to the street centroid	*When street names match but no exact address was found. Location is approximate.*
Place	Located to the structure, building or complex	*When building, residential complex or structure name match but no exact address was found. Location is approximate.*
Suburb	Located to the suburb area	*When suburb name match but no exact address was found. Location is approximate.*

The data used in this section was extracted from range of historical commercial trade directories and business listings. The business addresses were geocoded using historical information and the accuracy of the data may vary due to changes to the physical address at a given locality over time or the quality of the original records. From 2005, the historical business records in this section are considered more accurate as information was extracted from digital directories with geographic coordinate location information available. On this basis, reliance on the historic listing data should be considered when assessing the risk of contamination from an activity at the site. The presence of a business listing does not definitively confirm the actual activity that has occurred at the site. For more information on how these records were geocoded and the methodology used by Land Insight, contact us at info@landinsight.co.

Historical business directory listings have been filtered to match activities and industries identified as PCAs in Section 4.2. Please note that any record not identified within this section (due to error or unforeseen omission) does not necessarily mean that the screened area is not potentially contaminated or free of any risks.

Section 5 Natural Hazards

5.1 Fire Hazard

Map 5.1 (500m Buffer)

Bushfire Prone Areas

Category	Type	Details	Distance (m)	Direction
Bushfire Prone Area	Vegetation Buffer	Potential Impact Area	58.5	North-west
Bushfire Prone Area	Vegetation Category 3	Medium Risk Area	89.0	North-west

Bushfire History

Type	Season	Details	Distance (m)	Direction
Not identified			-	-

5.2 Flood and Erosion Hazards

Map 5.2 (500m Buffer)

Erosion Hazard

Category	Type	Details	Distance (m)	Direction
Landslip Erosion Risk	Very slight to negligible limitations	Very Low	0.0	Onsite
Water Erosion Risk	Moderate limitations	Moderate	0.0	Onsite
	Very slight to negligible limitations	Very Low	97.8	North-west
Wind Erosion Risk	Moderate limitations	Moderate	0.0	Onsite

Category	Type	Details	Distance (m)	Direction
	Slight but significant limitations	Low	97.8	North-west

Flood Hazard

Category	Type	Details	Distance (m)	Direction
Flood Planning Area	Flood Prone Land	Maitland Local Environmental Plan 2011	58.7	North-west

Generalised flood information definitions and explanations	
Annual Exceedance Probability (AEP) - The probability of a flood event of a given size occurring in any one year, usually expressed as a percentage annual chance	
0.2%AEP	A flood event of this size is considered rare but may still occur. A flood of size or larger has a 1 in 500 chance or a 0.2% probability of occurring in any year
1% AEP	A flood of this size or larger has a 1 in 100 chance or a 1% probability of occurring in any year
2% AEP	A flood of this size or larger has a 1 in 50 chance or a 2% probability of occurring in any year.
5% AEP	A flood of this size or larger has a 1 in 20 chance or a 5% probability of occurring in any year
20%AEP	A flood of this size or larger has a 1 in 5 chance or a 20% probability of occurring in any year.
Average Recurrence Interval (ARI). The long-term average number of years between the occurrence of a flood as big as, or larger than, the selected event. For example, floods reaching a height as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years	
Flood Liable Land - Synonymous with flood prone land, i.e. land susceptible to flooding by the Probable Maximum Flood (PMF) event. Note that the term flood liable land covers the whole floodplain, not just the part below the flood planning level	
Flood Planning Area (FPA) – Councils develop Flood Planning Areas (FPAs) as part of Flood Overlay mapping to guide future building and development in flood prone areas. The FPAs are designed to recognise the flood hazard for different flooding types.	
Flood Hazard - Flood hazard is a combination of frequency of flooding, the flood depth, and the speed or velocity at which the water can travel.	
Probable Maximum Flood (PMF) - The largest flood that could conceivably be expected to occur at a particular location, usually estimated from probable maximum precipitation. The PMF defines the maximum extent of flood prone land, that is, the floodplain. It is difficult to define a meaningful Annual Exceedance Probability for the PMF, but it is commonly assumed to be of the order of 10^{-4} to 10^{-7} (once in 10,000 to 10,000,000 years)	

Land Insight

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Appendix B
Environmental Mapping

EMM
creating opportunities

B.1 Appendix B: Environmental Mapping

Appendix A

REPORT MAPS

Maitland Gaol
6-18 John Street Maitland, NSW

Report nº:
LI-3145

PROPERTY SETTING

MAP 1.1

Subject Area and Sensitive Receptors

Subject area

Education

Parks

0 25 50 75 100 125m

Land Insight

MAP 1.2a

Zoning

Subject area

Land Zoning

- B2 | Local Centre
- B4 | Mixed Use
- R1 | General Residential
- RE1 | Public Recreation
- RE2 | Private Recreation
- RU1 | Primary Production
- SP1 | Special Activities
- SP2 | Special Purposes Zone – Infrastructure
- SP3 | Tourist

0 50 100 150 200 250m

Land Insight

MAP 1.2b

Planning Overlays

Subject area

Coal Seam Gas Exclusions

Strategic Agricultural Land

0 50 100 150 200 250m

Land Insight

MAP 1.3

Heritage

Subject area

State Heritage Register (SHR)
Heritage (LEP)

0 25 50 75 100 125m

Land Insight

MAP 1.4a

Soil Landscape and Salinity

Subject area
Radon Level (Bq/m3)
5-19

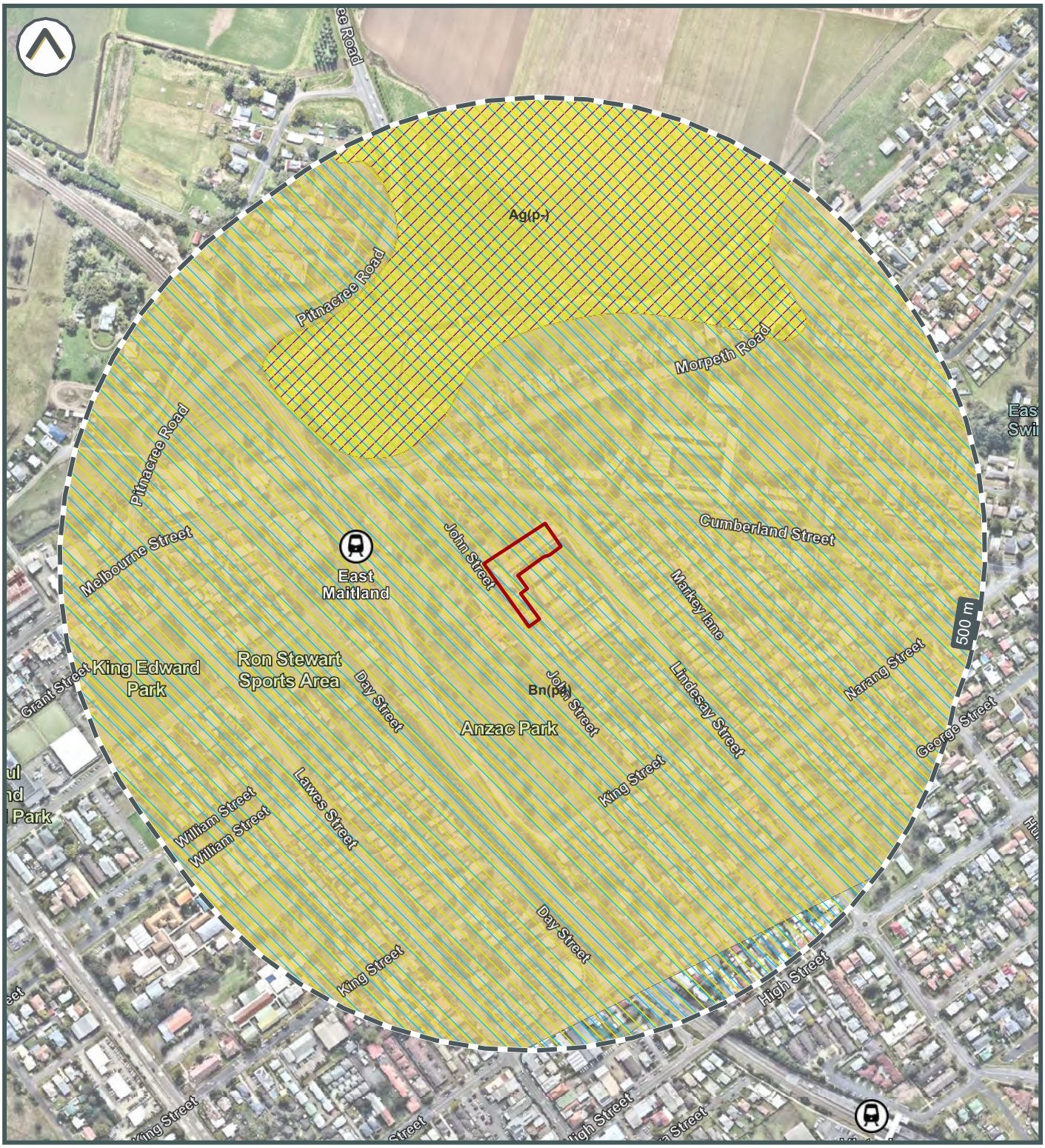
Soil Landscape
ALhu,Alluvial
REbe,Residual
REri,Residual

0 50 100 150 200 250m

Land Insight

Acid Sulfate Soils

MAP 1.4b



Subject area

ASRIS Atlas of Australian Sulfate Soils
- Ag(p-) | ASS in floodplains
- Bn(p4) | ASS in inland lakes, waterways, wetlands and riparian zones

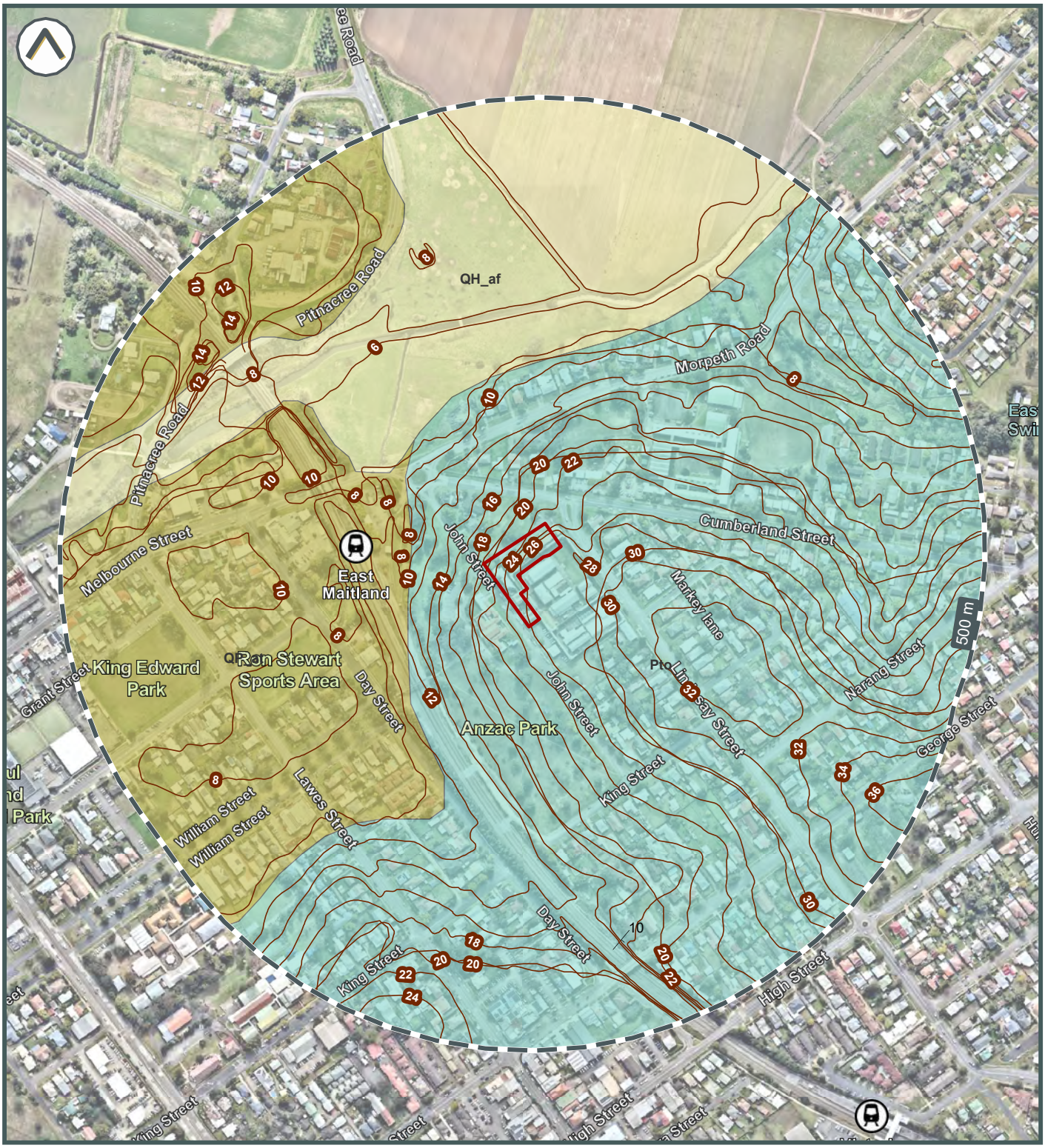
Acid Sulfate Soil Risk
- Class 4
- Class 5

0 50 100 150 200 250m

Land Insight

MAP 1.5

Geology and Topography



Subject area

Topographic contour (m)

Strike and dip of bedding

Cenozoic Sedimentary Province
QH_af
QP_at

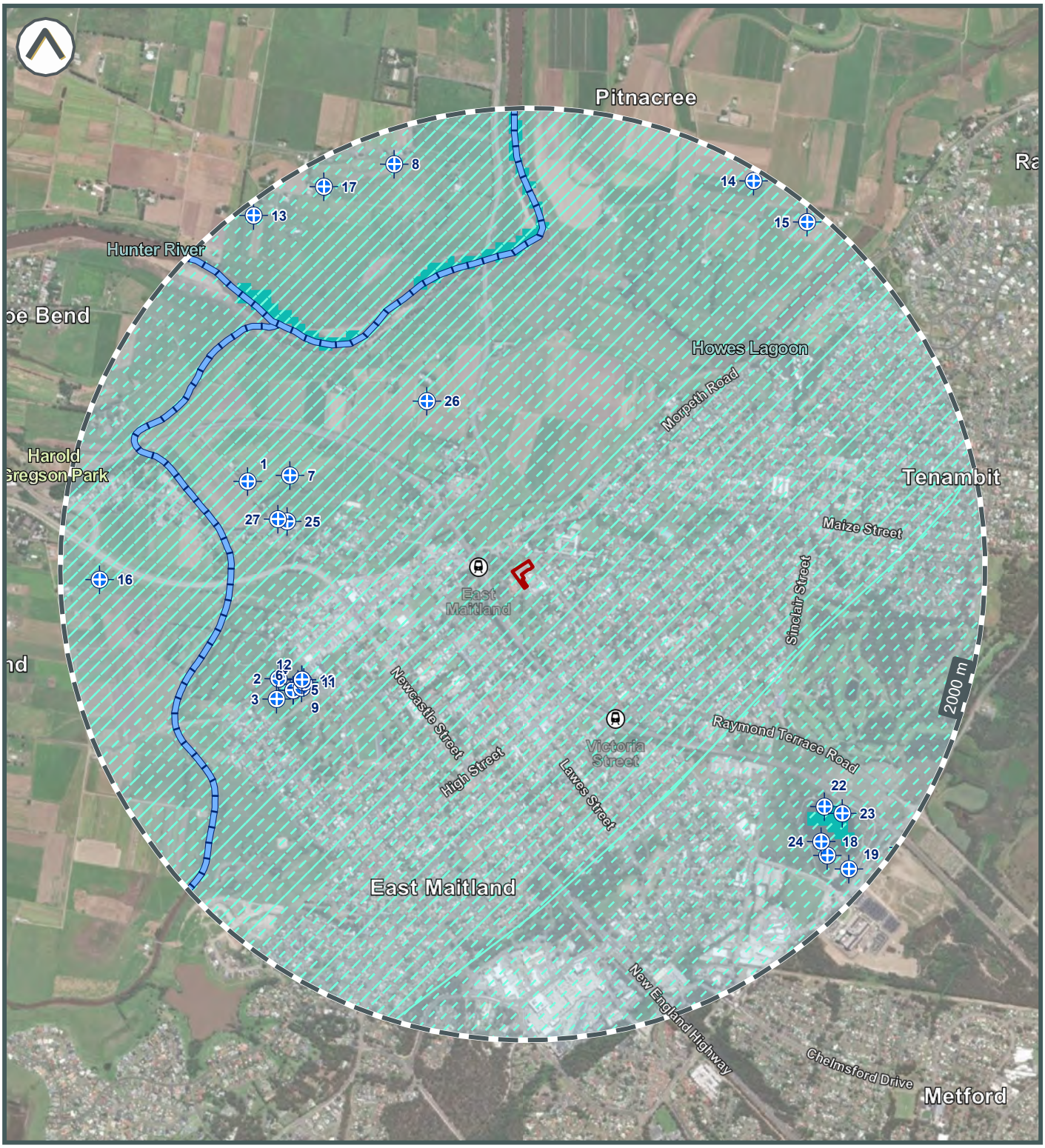
PERMO-TRIASSIC BASINS
Pto

0 50 100 150 200 250m

Land Insight

MAP 2.1

Hydrogeology and Groundwater Boreholes



Subject area

Groundwater bores

Protected Riparian Corridor

UPSS Environmentally Sensitive Zone

Wetlands

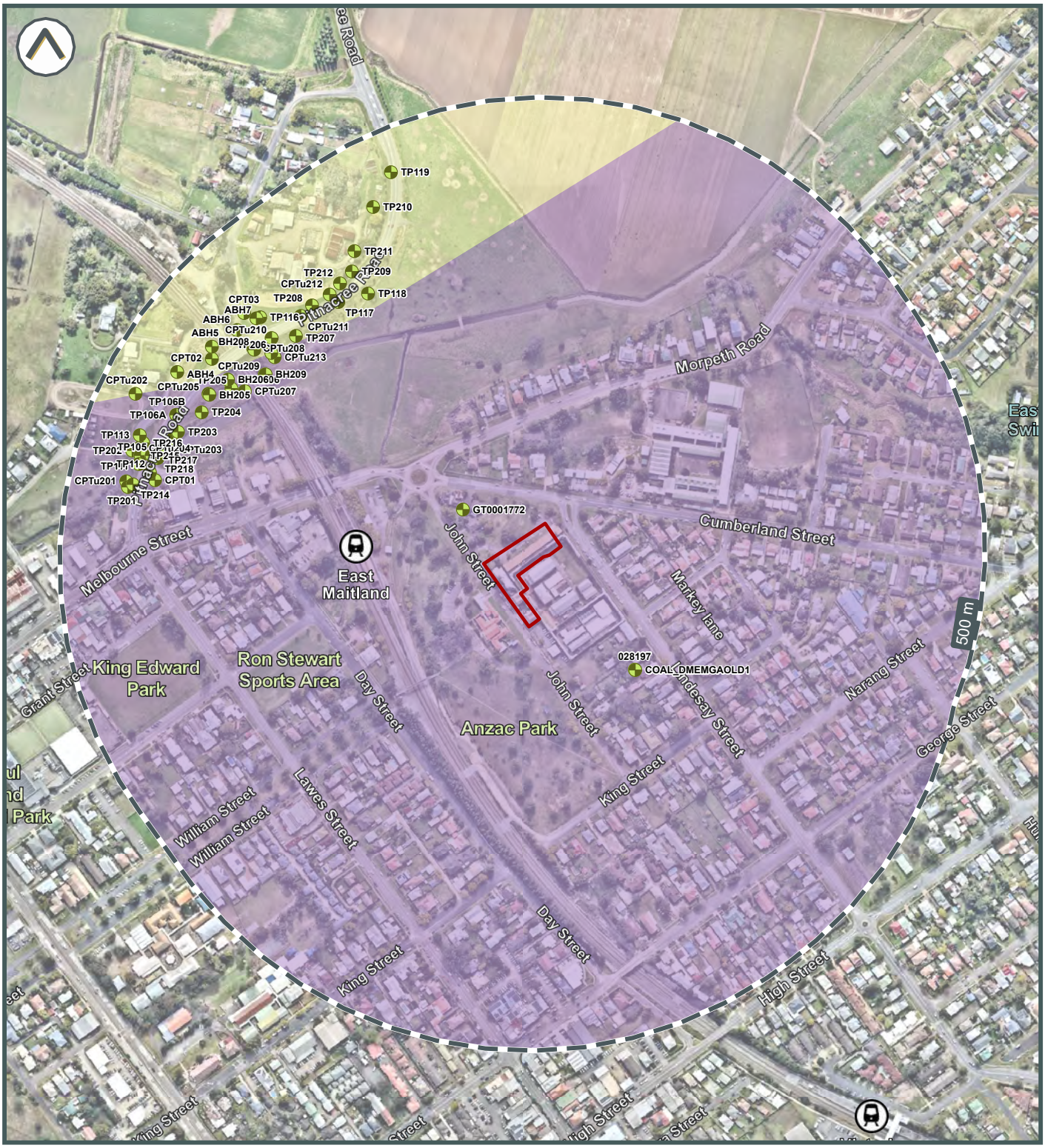
Aquifer type

Porous, extensive highly productive aquifers

0 200 400 600 800 1,000m

Land Insight

Hydrogeology and Other Boreholes



Subject area

Other borehole/monitoring well location

Hydrogeologic Unit

Surficial Sediment Aquifer (porous media – unconsolidated)

Palaeozoic and Pre-Cambrian Fractured Rock Aquifers (low permeability)

0 50 100 150 200 250m

Land Insight

MAP 3.1

Contaminated Land Public Register

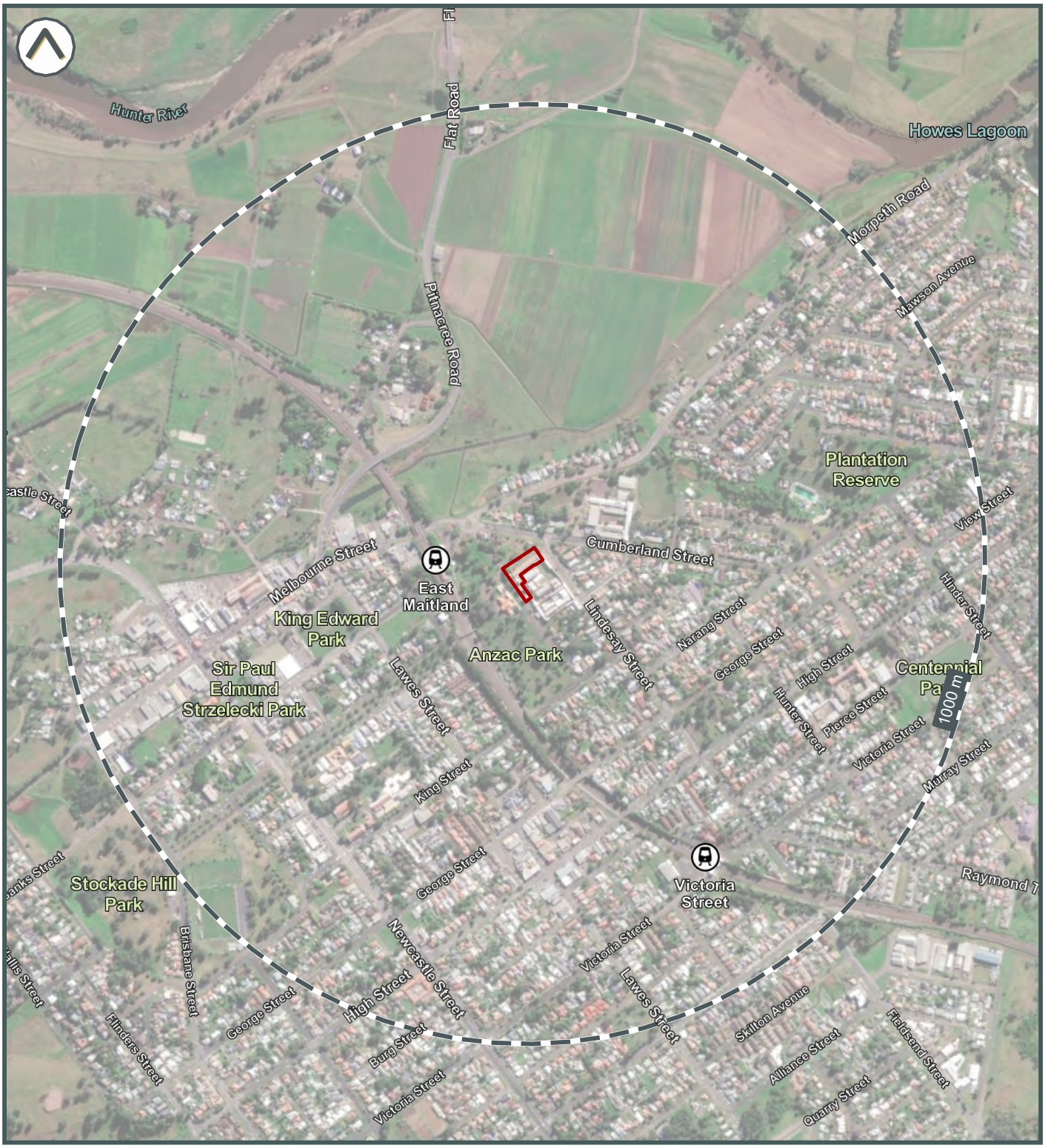
Subject area

Contaminated Land Public Register (EPA)
[Current] Sites Notified as Contaminated

0 100 200 300 400 500m

Land Insight

Licences, Approvals & Assessments

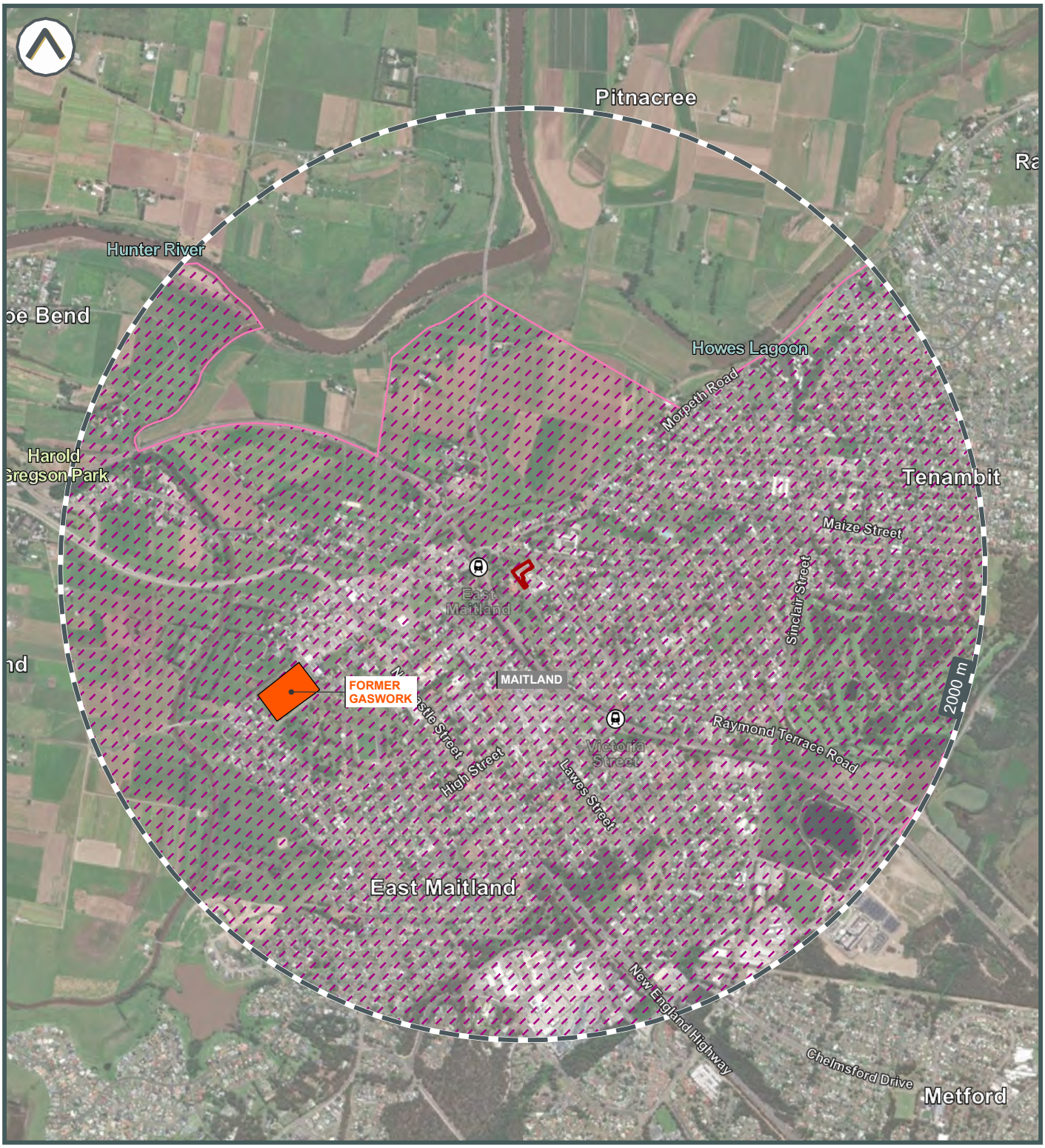


Subject area

0 100 200 300 400 500m

Land Insight

Sites Regulated by Other Jurisdictional Body



Subject area

PFAS sites
Former Gasworks
Defence Area / Military Sites
Defence Controlled Area

Unexploded Ordnance (UXO) Areas
Substantial Potential
Slight potential
Sea Dumping of Depth Charges
Sea Dumping of Depth Charges (Chemical munitions sea dumping)
Other Sea Dumping Sites
Other

0 200 400 600 800 1,000m

Land Insight

Other Potential Pollution Sources

Subject area

0 50 100 150 200 250m

Land Insight

POTENTIALLY CONTAMINATED AREAS

MAP 4.1

Potentially Contaminating Activities (PCAs)

Subject area
Rail Industry and Associated Activities

Data is current as when this report was created. However due to the turnover of business locations, some addresses may be former.

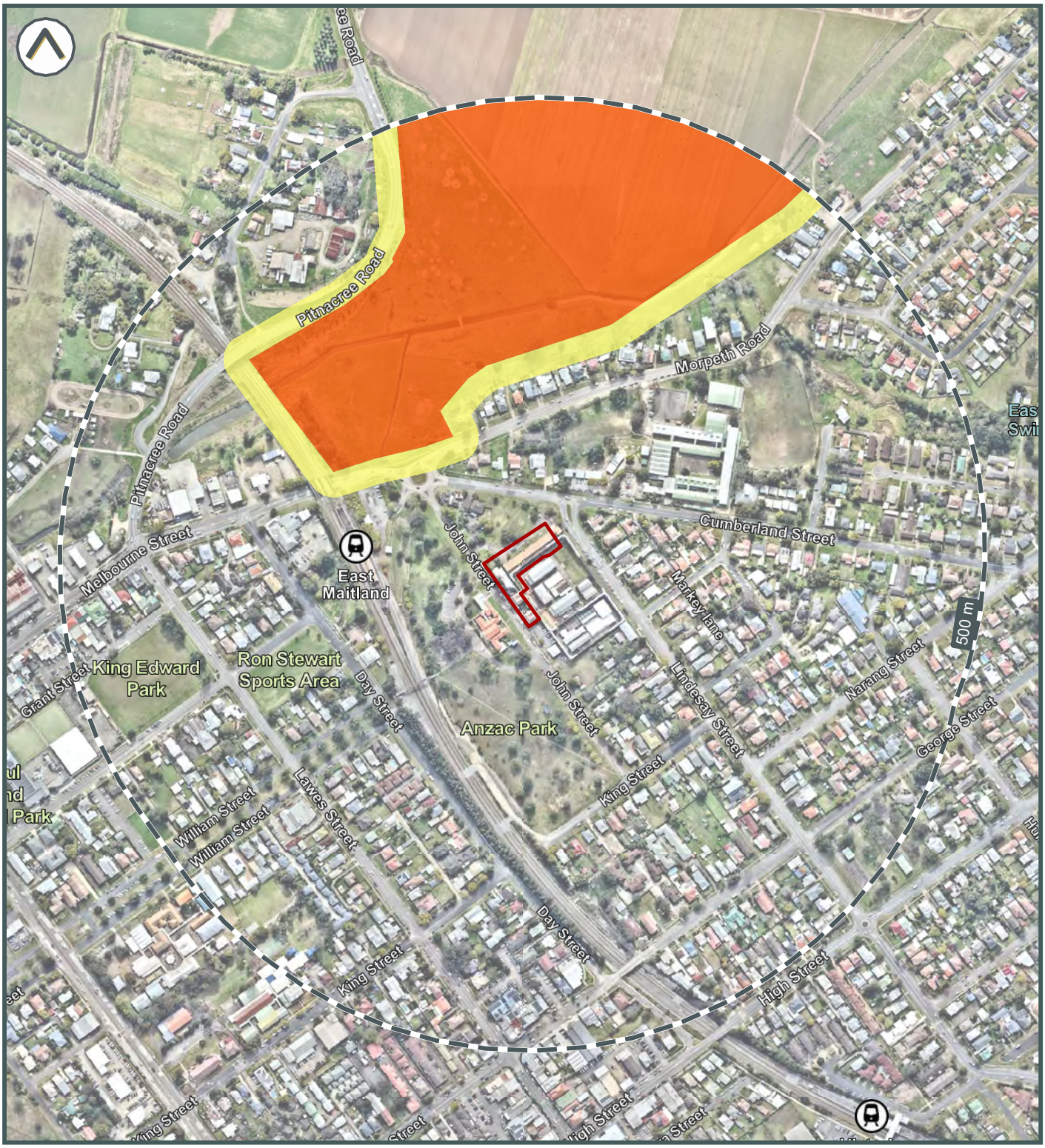
0 25 50 75 100 125m

Land Insight

NATURAL HAZARDS

MAP 5.1

Fire Hazards



Subject area

Vegetation Buffer

Bushfire Prone Area

Vegetation Category 3

0 50 100 150 200 250m

Land Insight

MAP 5.1

Fire and Flood Hazards

Subject area

Flood
- Flood Planning Area

Wind Erosion Risk
- Moderate
- Low

Water Erosion Risk
- Water Erosion Risk,Moderate
- Water Erosion Risk,Very Low

Landslip Erosion Risk
- Landslip Erosion Risk,Very Low

0 50 100 150 200 250m

Land Insight

Land
Insight

Appendix C
Historical Aerials and Mapping

EMM
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C.1 Appendix C: Historical Aerials and Mapping

Appendix B

HISTORIC IMAGERY

Maitland Gaol
6-18 John Street Maitland, NSW

Report nº:
LI-3145

Historic Aerial Photograph - 1954

LI-3132 Aerial Photograph 1954 07 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 1966

LI-3132 Aerial Photograph 1966 07 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 1970

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 1976

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 1984

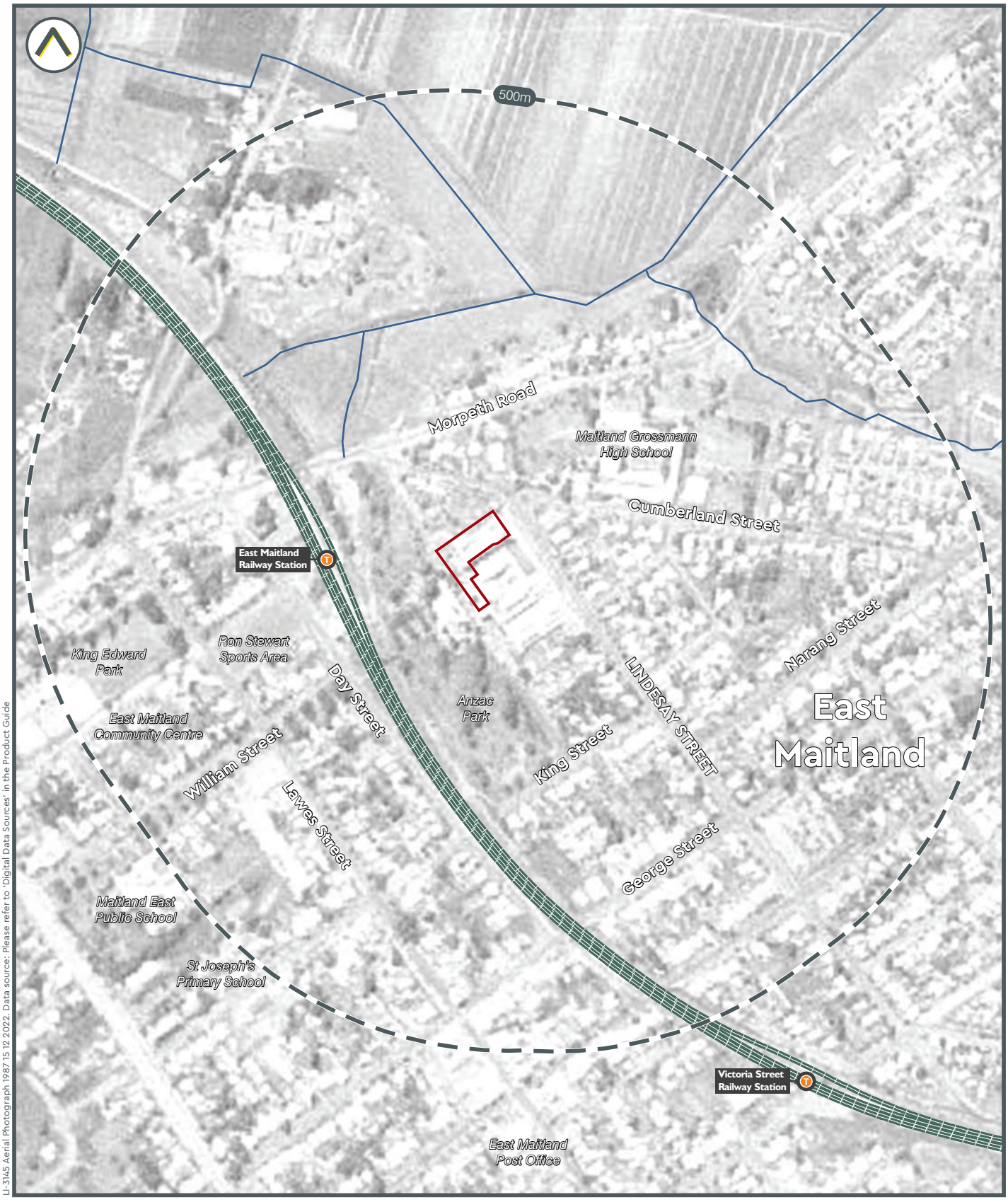
LI-3132 Aerial Photograph 1976 07.12.2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 1987



Subject area

0 200m

LI-3145 Aerial Photograph 1987 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Land Insight

Historic Aerial Photograph - 1993

Subject area

0 200m

LI-3145 Aerial Photograph 1993 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Land Insight

Historic Aerial Photograph - 1998

LI-3145 Aerial Photograph 1998 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 2001

LI-3145 Aerial Photograph 2001 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 2005

LI-3145 Aerial Photograph 2005 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 2011

LI-3145 Aerial Photograph 2011 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 2014

LI-3145 Aerial Photograph 2014 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 2016

Subject area

0 200m

Land Insight

Historic Aerial Photograph - 2019

Subject area

0 200m

LI-3145 Aerial Photograph 2019 15 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Land Insight

Historic Aerial Photograph - 2022

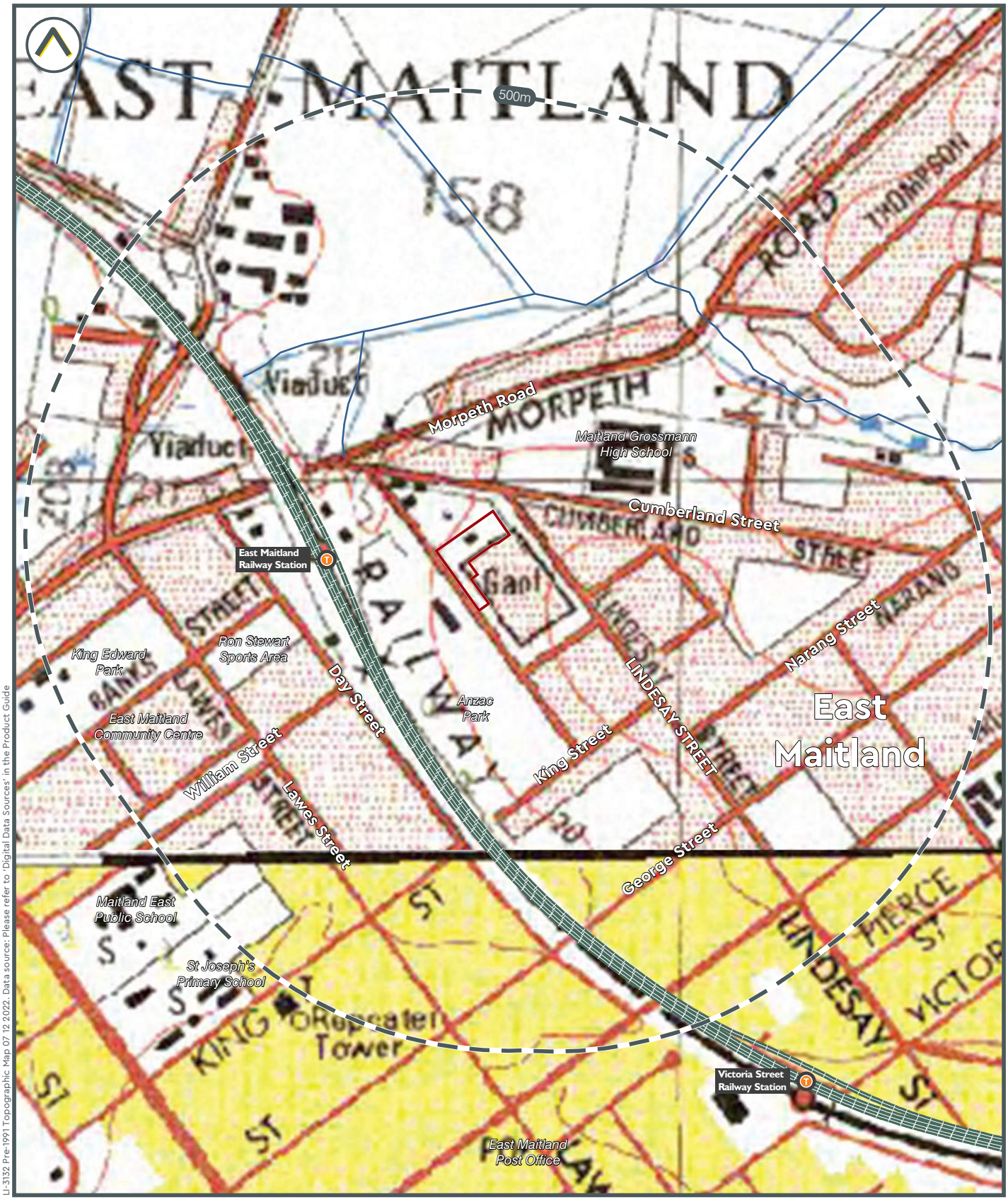
Subject area

0 200m

LI-3132 Aerial Photograph 2022 07 12 2022. Data source: Please refer to 'Digital Data Sources' in the Product Guide

Land Insight

1969-1991 1:25,000 Topographic Map (Maitland 9232-4S, Beresfield 9232-3N)



Subject area

0 200m

Land Insight

Land Insight

Appendix D
Supporting Information

EMM
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D.1 Supporting Information

Text here

Supporting Information

Project	Maitland Gaol – Preliminary Site Investigation		
Client	MCC	**Job number**	E221249

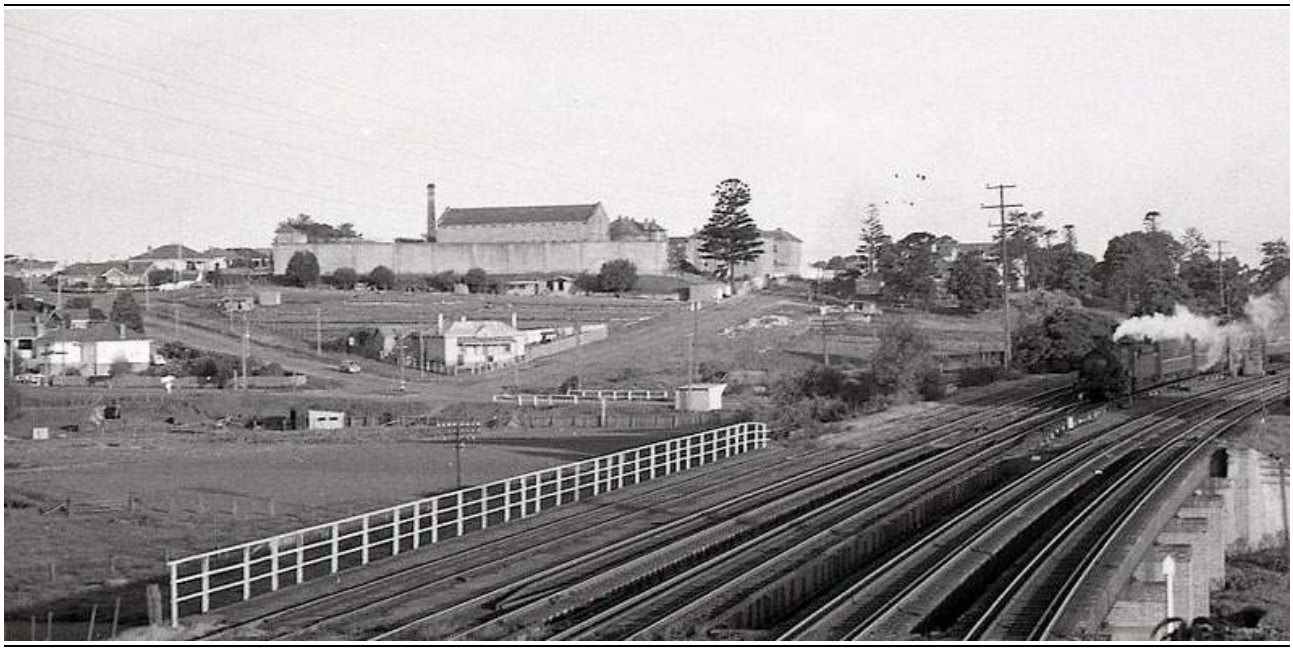


Photo 1

View from west of Maitland Gaol looking east. Photo taken from near current Pitnacree Road overpass of Main Northern Railway

Photo 2

Photo taken from watchtower located on the southern corner of Building 14 looking north-east. Inscription reads “View from No. 10 Tower showing (1) No. 8 Tower (2) Female Yard (3) Washhouse (4) No. 2 Male Yard (5) B Wing”.

Note that Building 14 does not appear to be extant in the photograph.

Photo 3

View of Maitland Gaol from southwest boundary of the Site looking east. Building 2 is visible in the photograph. Building 14 and Building 22 are not extant in the photograph.

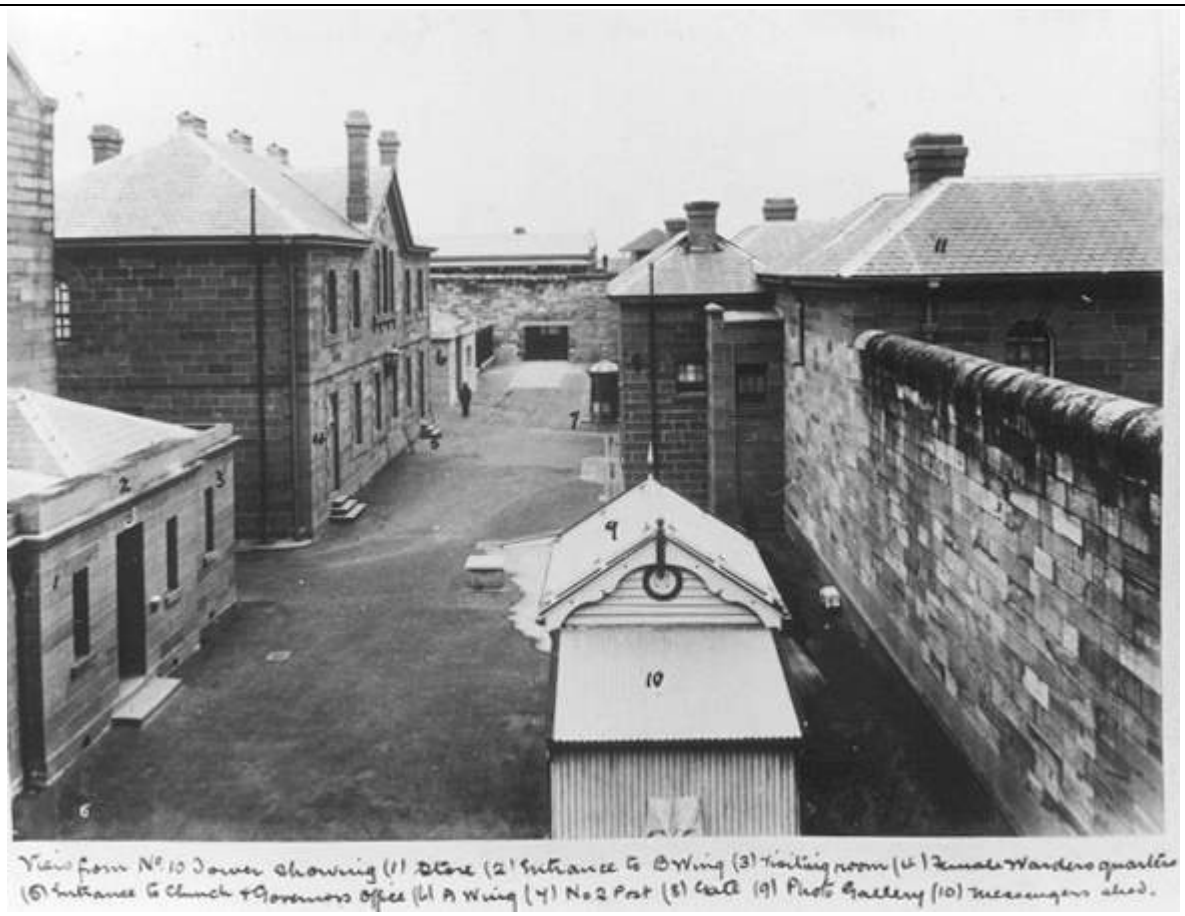


Photo 4

Photo taken from watchtower located on the southern corner of Building 14 looking south-east. Inscription reads "View from No. 10 Tower showing (1) Store (2) Entrance to B Wing (3) Visiting Room (4) Female Wardens Quarters (5) Entrance to Church and Governor's Office (6) A Wing (7) No. 2 Post (8) Gate (9) Photo Gallery (10) Messengers Shed".

Building 2 is visible in the right of the photograph (marked as "11"). The Photo Galley/Messengers Shed (marked as "9" and "10") is located within the Site however has since been demolished.

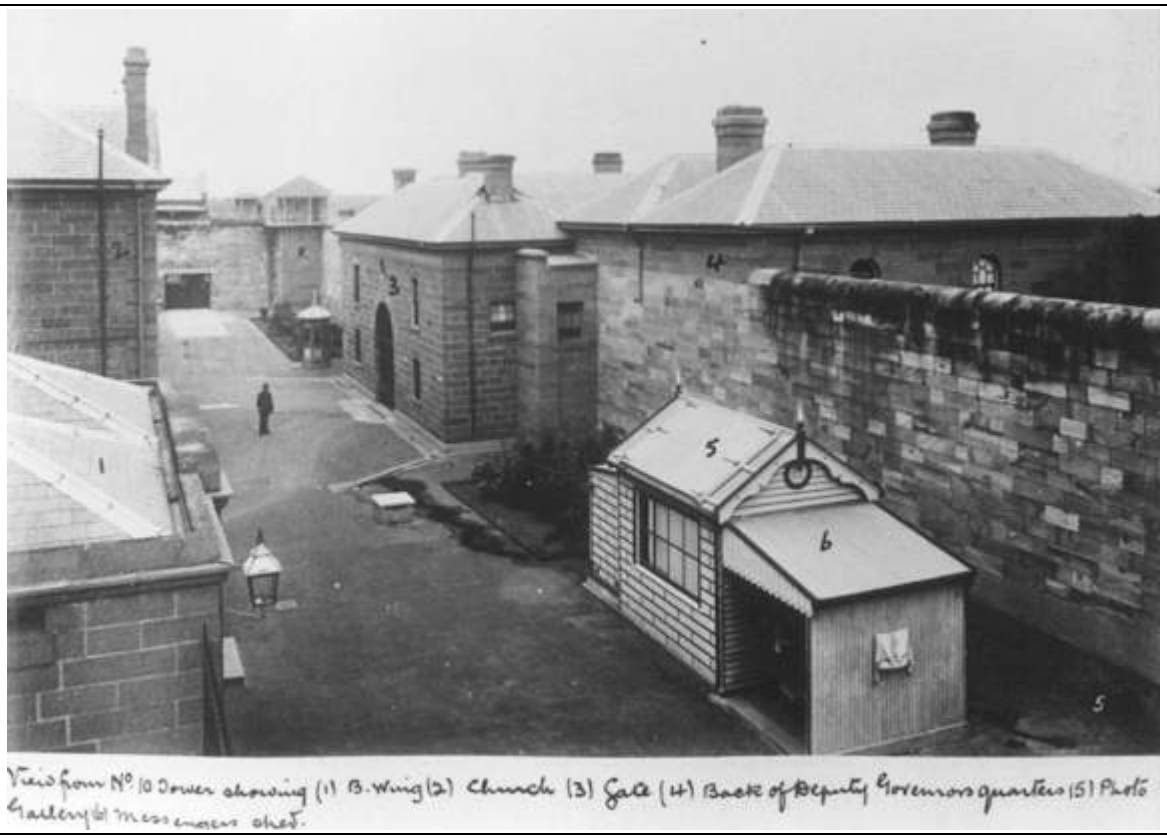


Photo 5

Photo taken from north-east of the watchtower located on the southern corner of Building 14 looking south-east. Inscription reads "View from No. 10 Tower showing (1) B Wing (2) Church (3) Gate (4) Back of Deputy Governor's Quarters (5) Photo Gallery (6) Messengers Shed".

Building 2 is visible in the right of the photograph (marked as "4"). The Photo Galley/Messengers Shed (marked as "5" and "6") is located within the Site however has since been demolished.

Appendix E
Historical Certificates of Title

EMM
creating opportunities

E.1 Appendix E: Historical Certificates of title

Cadastral Records Enquiry Report : Lot 469 DP 1002766

Ref : NOUSER

Locality : EAST MAITLAND
Parish : MAITLAND
LGA : MAITLAND
County : NORTHUMBERLAND

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

	Status	Surv/Comp	Purpose
DP758374			
Lot(s): 1, 3 Section : 60			
CA101887 - LOTS 1-3 SECTION 60 DP758374			
DP1002766			
Lot(s): 470			
NSW GAZ. REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 9705 - AFFECTING LOT 470 DP1002766	19-01-2007		Folio : 179
NSW GAZ. REVOCATION OF RESERVATION OF CROWN LAND RESERVE NO. 9705 AND ERRATUM - AFFECTING LOT 470 DP1002766	25-01-2007		Folio : 351
DP1094345			
Lot(s): 4			
CA98277 - LOT 4 DP1094345			
DP1097144			
Lot(s): 2			
CA98591 - LOT 2 DP1097144			
CA100811 - NPW			
DP1099053			
Lot(s): 1			
CA101109 - LOT 1 DP1099053			
DP1207466			
Lot(s): 1027			
CA174019 - LOT 1027 DP1207466			

Plan	Surv/Comp	Purpose
DP12773	SURVEY	UNRESEARCHED
DP19942	SURVEY	UNRESEARCHED
DP20142	SURVEY	UNRESEARCHED
DP25151	SURVEY	UNRESEARCHED
DP317442	SURVEY	UNRESEARCHED
DP332176	COMPILATION	UNRESEARCHED
DP348906	SURVEY	UNRESEARCHED
DP367362	SURVEY	UNRESEARCHED
DP372846	COMPILATION	UNRESEARCHED
DP433262	COMPILATION	UNRESEARCHED
DP433836	COMPILATION	UNRESEARCHED
DP530498	SURVEY	SUBDIVISION
DP734063	COMPILATION	DEPARTMENTAL
DP737978	COMPILATION	DEPARTMENTAL
DP744923	COMPILATION	DEPARTMENTAL
DP758374	COMPILATION	CROWN ADMIN NO.
DP799085	COMPILATION	DEPARTMENTAL
DP799773	COMPILATION	DEPARTMENTAL
DP880631	SURVEY	SUBDIVISION
DP1002766	SURVEY	SUBDIVISION
DP1042671	COMPILATION	LIMITED FOLIO CREATION
DP1094345	COMPILATION	LIMITED FOLIO CREATION
DP1097144	COMPILATION	LIMITED FOLIO CREATION
DP1099053	COMPILATION	LIMITED FOLIO CREATION
DP1207466	COMPILATION	LIMITED FOLIO CREATION

PLAN FORM 2

Plan Drawing only to appear in this space

SIGNATURES, SEALS AND STATEMENTS of intention to dedicate public roads or to create public reserves, drainage reserves, easements restrictions on the use of land or positive covenants.

By delegation pursuant to section 380 of the Crown Lands Act 1989 and with authority under section 131 of the Real Property Act 1900 from the Minister administering the Crown Lands Act 1989 on behalf of the State of New South Wales.

ACTING DISTRICT MANAGER
28 MAY 1999

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer 26/5/99

Land District ..... MAITLAND

Paper No. ..... MR 99 H 55 M 99 H 37

Field Book ..... pages .....

Council's Certificate

I hereby certify that-

[a] the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

* [b] the requirements of 1 Part 3 Division 2 of the Water Board Act 1987, or 1 Part 5 Division 7 of the Hunter Water Board (Corporatisation) Act 1991,

have been complied with by the applicant in relation to the proposed ..... (insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. .....

Date .....

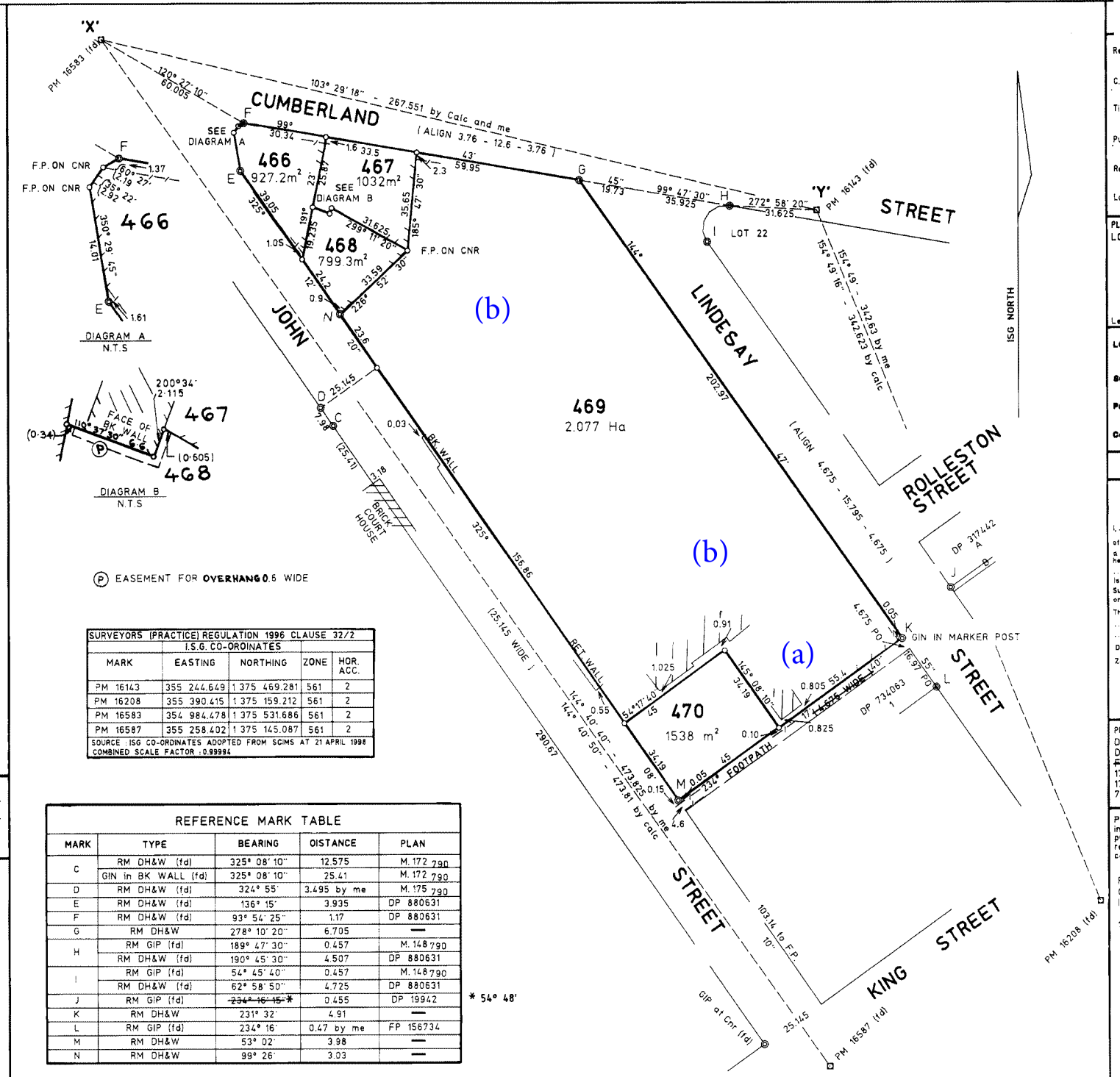
(Signature) ..... General Manager/Authorised Person

Council File No. .....

* This part of the certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Water Board and Hunter Water Corporation Ltd.

1 Delete if inapplicable

SURVEYOR'S REFERENCE: 9814



SURVEYORS (PRACTICE) REGULATION 1996 CLAUSE 32/2 I.S.G. CO-ORDINATES				
MARK	EASTING	NORTHING	ZONE	HOR. ACC.
PM 16143	355 244.649	1 375 469.281	561	2
PM 16208	355 390.415	1 375 159.212	561	2
PM 16583	354 984.478	1 375 531.686	561	2
PM 16587	355 258.402	1 375 145.087	561	2

SOURCE : ISG CO-ORDINATES ADOPTED FROM SCIMS AT 21 APRIL 1998
COMBINED SCALE FACTOR : 0.99994

REFERENCE MARK TABLE

MARK	TYPE	BEARING	DISTANCE	PLAN
C	RM DH&W (fd)	325° 08' 10"	12.575	M. 172 790
	GIN in BK WALL (fd)	325° 08' 10"	25.41	M. 172 790
D	RM DH&W (fd)	324° 55'	3.495 by me	M. 175 790
E	RM DH&W (fd)	136° 15'	3.935	DP 880631
F	RM DH&W (fd)	93° 54' 25"	1.17	DP 880631
G	RM DH&W	278° 10' 20"	6.705	—
H	RM GIP (fd)	189° 47' 30"	0.457	M. 148790
	RM DH&W (fd)	190° 45' 30"	4.507	DP 880631
I	RM GIP (fd)	54° 45' 40"	0.457	M. 148790
	RM DH&W (fd)	62° 58' 50"	4.725	DP 880631
J	RM GIP (fd)	~~234° 16' 15"~~ *	0.455	DP 19942
K	RM DH&W	231° 32'	4.91	—
L	RM GIP (fd)	234° 16'	0.47 by me	FP 156734
M	RM DH&W	53° 02'	3.98	—
N	RM DH&W	99° 26'	3.03	—

DP1002766

Registered: 2-7-1999

C.A: .....

Title System: CROWN LAND

Purpose: CROWN FOLIO CREATION

Ref.Map: U5472-43 *

Last Plan: .....

PLAN OF SUBDIVISION OF LOTS 6 & 7, SECTION 21, DP 758374

Lengths are in metres. Reduction Ratio 1:1000

LGA: MAITLAND

Suburb/Locality: EAST MAITLAND

Parish: MAITLAND

County: NORTHUMBERLAND

~~This is sheet 1 of my plan in ..... sheets.~~
(Delete if inapplicable)

Survey Certificate
Surveyors (Practice) Regulation 1996

I, EDWARD JAMES BRAY
of DEPT OF PUBLIC WORKS & SERVICES
a surveyor registered under the Surveyors Act 1929, hereby certify that the survey represented in this plan
OF SURVEY
is accurate, has been made in accordance with the Surveyors (Practice) Regulation 1996 and was completed on 12 th February 1999
The survey relates to
SUBDIVISION
Datum Line: 'X' - 'Y'
Zone : Suburban/~~Country~~ 56

Signature .....
Surveyor registered under the Surveyors Act 1929

Plans used in preparation of survey/compilation.
DP 880631
DP 839468
~~FP 156738~~ DP 156734
172-790
175-790
78-790

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

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

1. EASEMENT FOR OVERHANG 0.6 WIDE Ⓟ

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

M P D

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

PLAN ALTERED IN L.T.O. AT SURVEYOR'S REQUEST

SB 55009

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
8/12/2022 9:11AM

FOLIO: 469/1002766

First Title(s): THIS FOLIO
Prior Title(s): CROWN LAND

Recorded	Number	Type of Instrument	C.T. Issue
2/7/1999	DP1002766	DEPOSITED PLAN	FOLIO CREATED EDITION 1
18/5/2011	AG239593	DEPARTMENTAL DEALING	
4/6/2013	AH778147	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

advlegs PRINTED ON 8/12/2022

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 469/1002766

SEARCH DATE	TIME	EDITION NO	DATE
8/12/2022	9:11 AM	1	2/7/1999

LAND

LOT 469 IN DEPOSITED PLAN 1002766
AT EAST MAITLAND
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF MAITLAND COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1002766

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES

SECOND SCHEDULE (3 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS (S.171 CROWN LANDS ACT 1989)
* 2 RESERVE NO. 20743 FOR GAOL AND LOCKUP NOTIFIED IN THE GOVERNMENT GAZETTE OF 12 MAY 1894 AND 18 MARCH 1977
* 3 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 8/12/2022

Cadastral Records Enquiry Report : Lot 469 DP 1002766

Ref : NOUSER

Locality : EAST MAITLAND
Parish : MAITLAND
LGA : MAITLAND
County : NORTHUMBERLAND

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DP1002766			
Lot(s): 470			
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Lot(s): 4			
CA98277 - LOT 4 DP1094345			
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DP799773	COMPILATION	DEPARTMENTAL
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DP1097144	COMPILATION	LIMITED FOLIO CREATION
DP1099053	COMPILATION	LIMITED FOLIO CREATION
DP1207466	COMPILATION	LIMITED FOLIO CREATION

PLAN FORM 2

Plan Drawing only to appear in this space

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ACTING DISTRICT MANAGER
28 MAY 1999

Crown Lands Office Approval

PLAN APPROVED ..... Authorised Officer 26/5/99

Land District ..... MAITLAND

Paper No. ..... MR 99 H 55 M 99 H 37

Field Book ..... pages .....

Council's Certificate

I hereby certify that-

[a] the requirements of the Local Government Act, 1919 (other than the requirements for the registration of plans), and

* [b] the requirements of 1 Part 3 Division 2 of the Water Board Act 1987, or 1 Part 5 Division 7 of the Hunter Water Board (Corporatisation) Act 1991,

have been complied with by the applicant in relation to the proposed ..... (insert "new road", "subdivision" or "consolidated lot") set out herein

Subdivision No. .....

Date .....

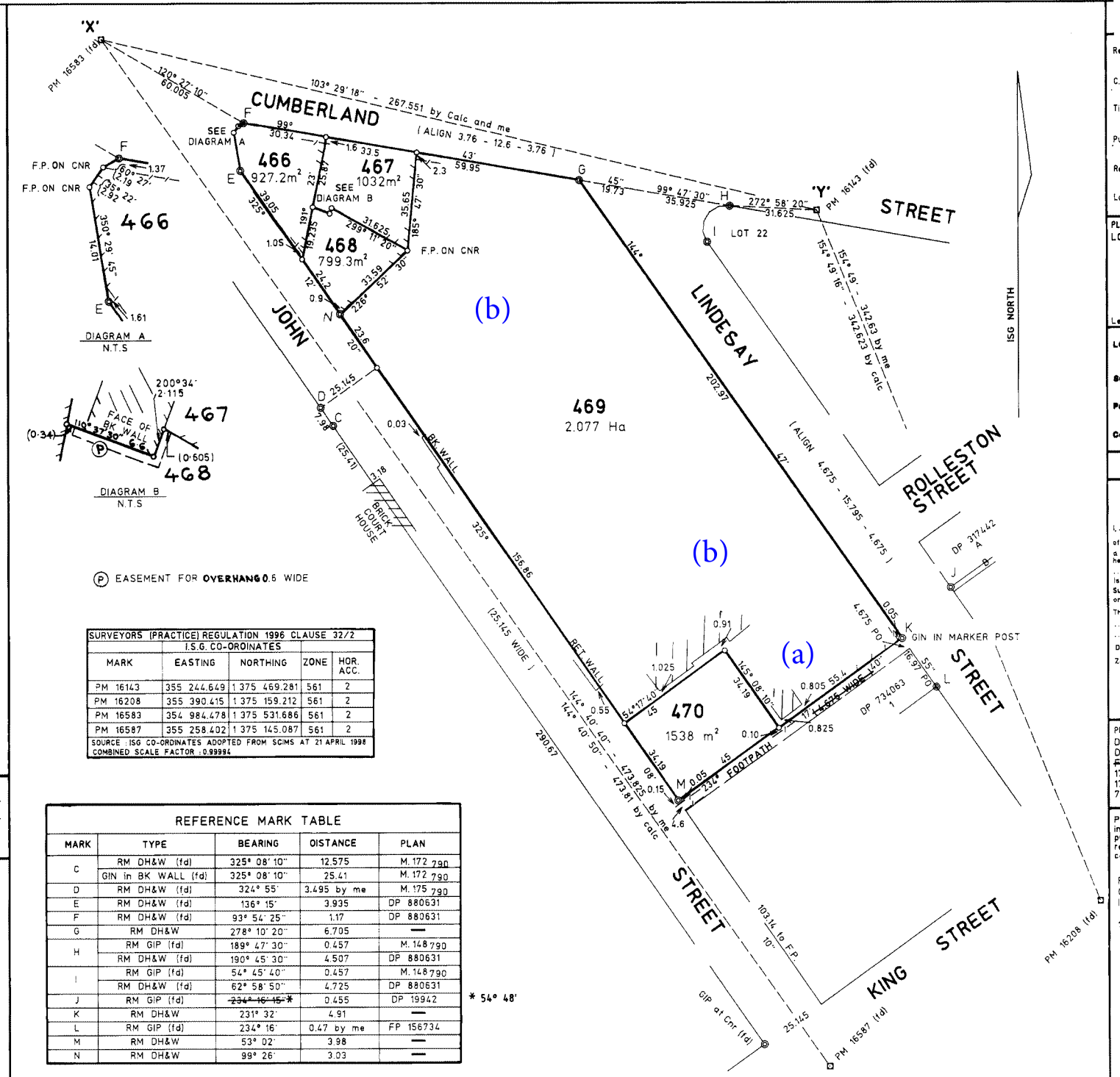
(Signature) ..... General Manager/Authorised Person

Council File No. .....

* This part of the certificate to be deleted where the application is only for a consolidated lot or the opening of a new road or where the land to be subdivided is wholly outside the areas of operations of the Water Board and Hunter Water Corporation Ltd.

1 Delete if inapplicable

SURVEYOR'S REFERENCE: 9814



SURVEYORS (PRACTICE) REGULATION 1996 CLAUSE 32/2 I.S.G. CO-ORDINATES				
MARK	EASTING	NORTHING	ZONE	HOR. ACC.
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PM 16208	355 390.415	1 375 159.212	561	2
PM 16583	354 984.478	1 375 531.686	561	2
PM 16587	355 258.402	1 375 145.087	561	2

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COMBINED SCALE FACTOR : 0.99994

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J	RM GIP (fd)	~~234° 16' 15"~~ *	0.455	DP 19942
K	RM DH&W	231° 32'	4.91	—
L	RM GIP (fd)	234° 16'	0.47 by me	FP 156734
M	RM DH&W	53° 02'	3.98	—
N	RM DH&W	99° 26'	3.03	—

DP1002766

Registered: 2-7-1999

C.A: .....

Title System: CROWN LAND

Purpose: CROWN FOLIO CREATION

Ref.Map: U5472-43 *

Last Plan: .....

PLAN OF SUBDIVISION OF LOTS 6 & 7, SECTION 21, DP 758374

Lengths are in metres. Reduction Ratio 1:1000

LGA: MAITLAND

Suburb/Locality: EAST MAITLAND

Parish: MAITLAND

County: NORTHUMBERLAND

~~This is sheet 1 of my plan in ..... sheets.~~
(Delete if inapplicable)

Survey Certificate
Surveyors (Practice) Regulation 1996

I, EDWARD JAMES BRAY
of DEPT OF PUBLIC WORKS & SERVICES
a surveyor registered under the Surveyors Act 1929, hereby certify that the survey represented in this plan
OF SURVEY
is accurate, has been made in accordance with the Surveyors (Practice) Regulation 1996 and was completed on 12 th February 1999
The survey relates to
SUBDIVISION
Datum Line: 'X' - 'Y'
Zone : Suburban/~~Country~~ 56

Signature .....
Surveyor registered under the Surveyors Act 1929

Plans used in preparation of survey/compilation.
DP 880631
DP 839468
~~FP 156738~~ DP 156734
172-790
175-790
78-790

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements, restrictions on the use of land or positive covenants.

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

1. EASEMENT FOR OVERHANG 0.6 WIDE Ⓟ

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 Table of mm 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390

M P D

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

PLAN ALTERED IN L.T.O. AT SURVEYOR'S REQUEST

SB 55009

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE
8/12/2022 9:11AM

FOLIO: 469/1002766

First Title(s): THIS FOLIO
Prior Title(s): CROWN LAND

Recorded	Number	Type of Instrument	C.T. Issue
2/7/1999	DP1002766	DEPOSITED PLAN	FOLIO CREATED EDITION 1
18/5/2011	AG239593	DEPARTMENTAL DEALING	
4/6/2013	AH778147	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

advlegs PRINTED ON 8/12/2022

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 469/1002766

SEARCH DATE	TIME	EDITION NO	DATE
8/12/2022	9:11 AM	1	2/7/1999

LAND

LOT 469 IN DEPOSITED PLAN 1002766
AT EAST MAITLAND
LOCAL GOVERNMENT AREA MAITLAND
PARISH OF MAITLAND COUNTY OF NORTHUMBERLAND
TITLE DIAGRAM DP1002766

FIRST SCHEDULE

THE STATE OF NEW SOUTH WALES

SECOND SCHEDULE (3 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS (S.171 CROWN LANDS ACT 1989)
* 2 RESERVE NO. 20743 FOR GAOL AND LOCKUP NOTIFIED IN THE GOVERNMENT GAZETTE OF 12 MAY 1894 AND 18 MARCH 1977
* 3 THE LAND IS A RESERVE WITHIN THE MEANING OF PART 5 OF THE CROWN LANDS ACT 1989 AND THERE ARE RESTRICTIONS ON TRANSFER AND OTHER DEALINGS IN THE LAND UNDER THAT ACT, WHICH MAY REQUIRE CONSENT OF THE MINISTER.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

advlegs PRINTED ON 8/12/2022

Appendix F
Photographic Plates

EMM
creating opportunities

F.1 Appendix F: Photographic plates

Photo log

Project	Maitland Gaol – Preliminary Site Investigation		
Client	MCC	**Job number**	E221249
EMM field staff	Thomas Mailler	**Date:**	20/12/2022

Photo 1
Potential ACM identified in roof of western room
Location: Building 2, groundfloor
Direction: 333° clockwise from north

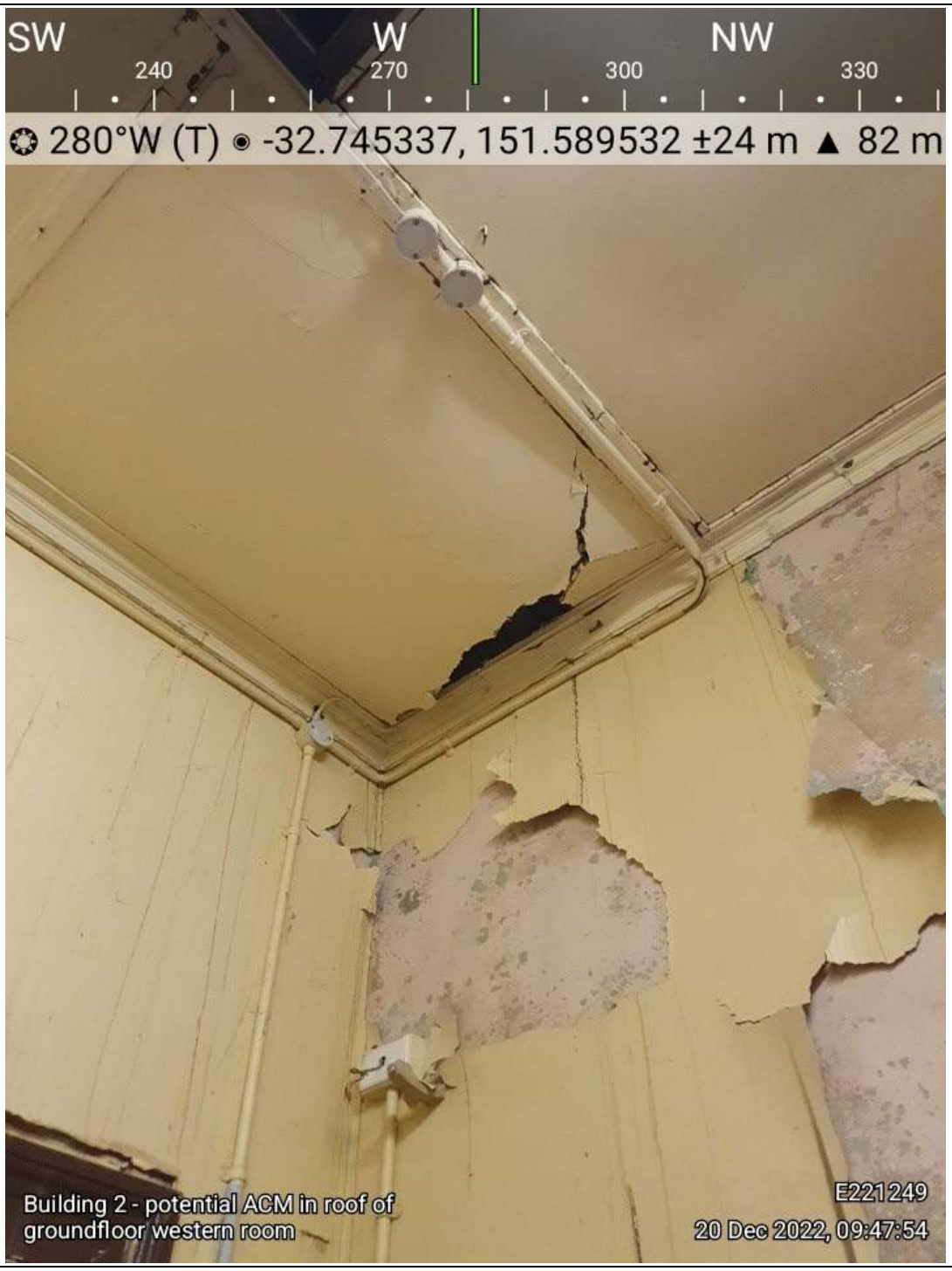

Photo 2
Potential ACM in roof of western room
Location: Building 2, groundfloor
Direction: 280° clockwise from north

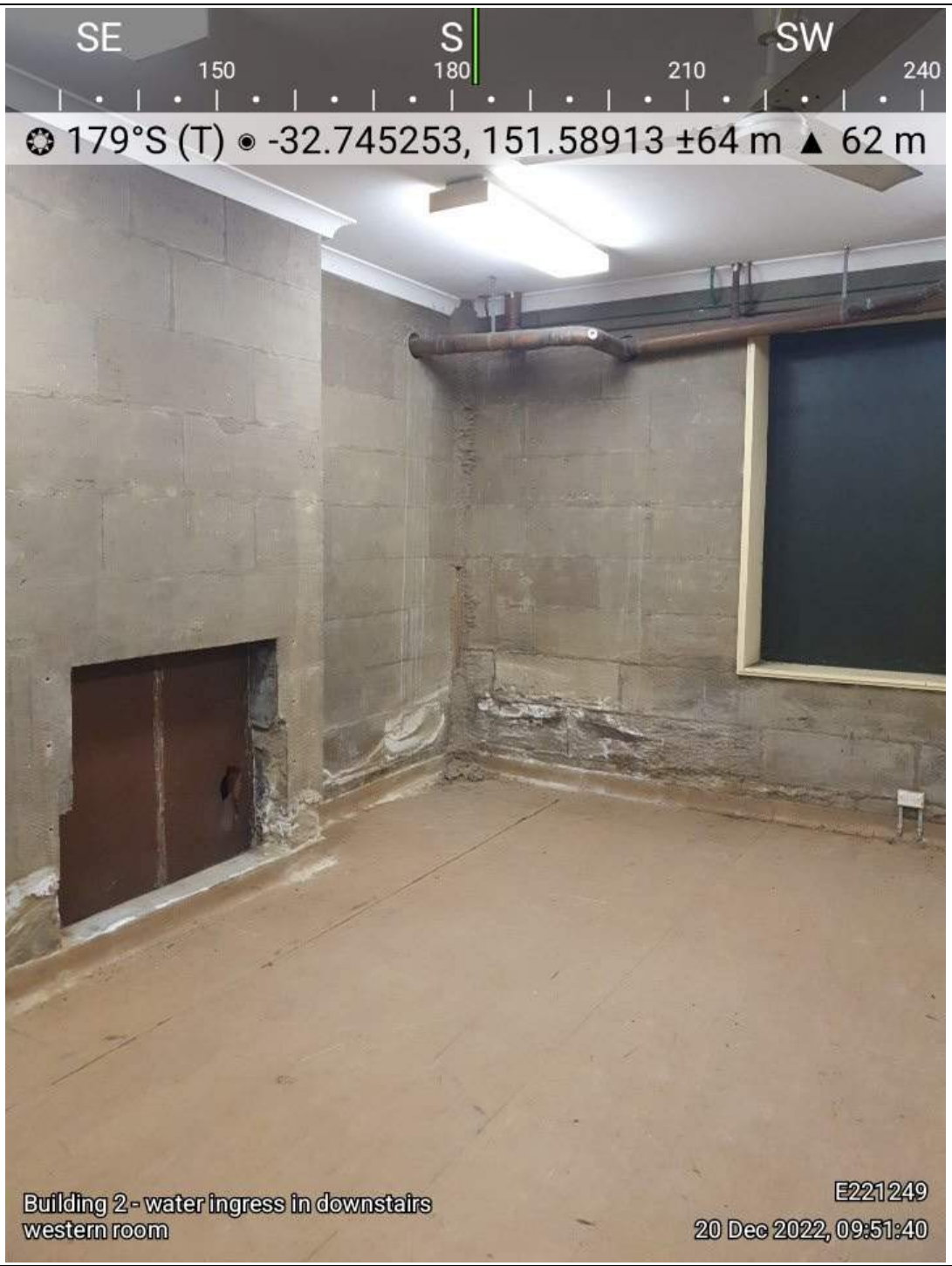

Photo 3
Water ingress in western room
Location: Building 2, basement
Direction: 179° clockwise from north

Photo 4
Possible gym in southern room, note water damage to walls
Location: Building 2, basement
Direction: 258° clockwise from north

Photo 5
Potential friable ACM observed in gym/southern room
Location: Building 2, basement
Direction: 57° clockwise from north

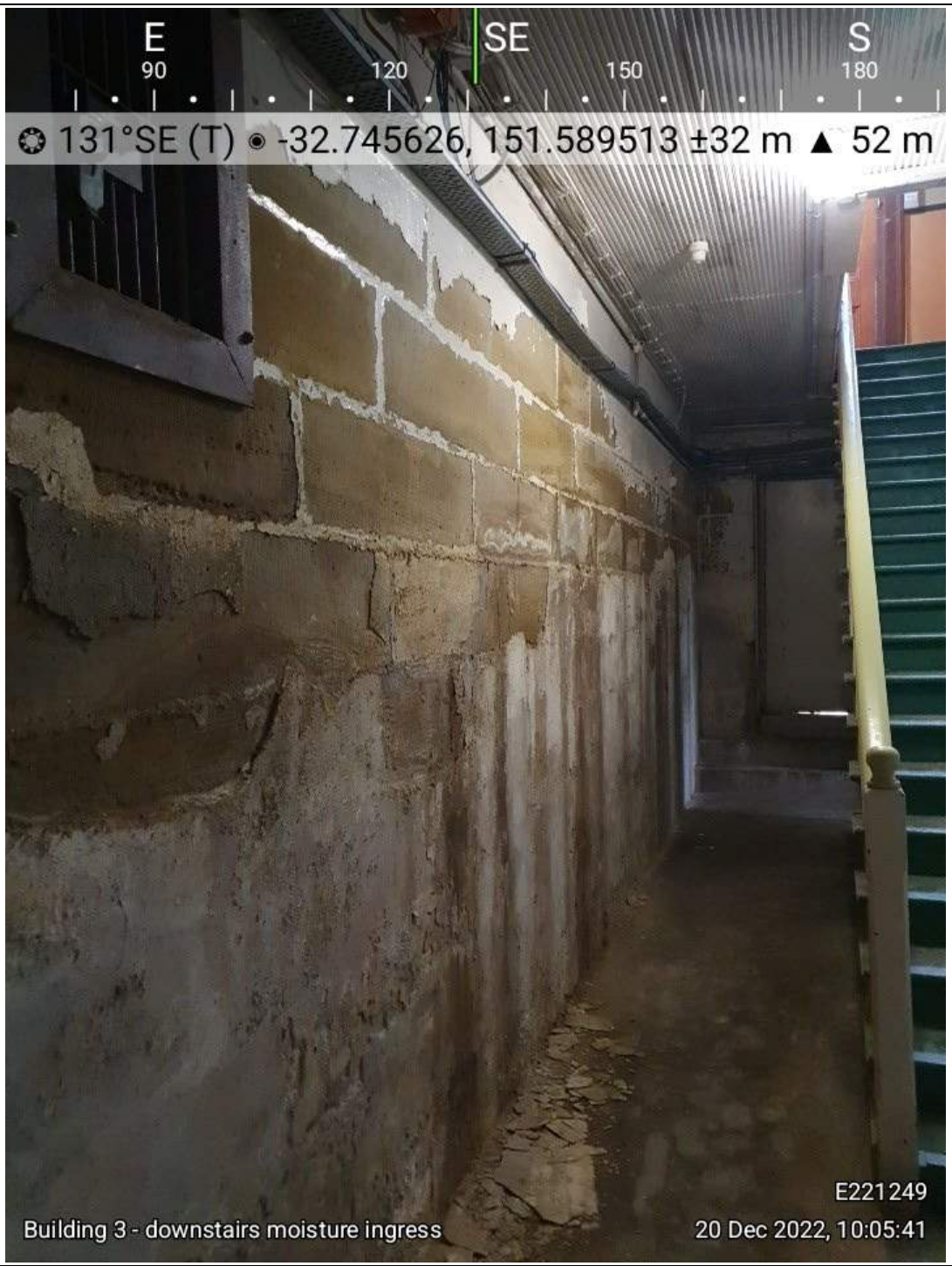

Photo 6
Damage to cladding resulting from water ingress
Location: Building 3, basement
Direction: 131° clockwise from north

Photo 7
Future courtyard area viewed from south-east entrance
Location: North-east of Building 1 – Gatehouse
Direction: 41° clockwise from north

Photo 8
Auditorium viewed from internal entrance
Location: Building 14
Direction: 28° clockwise from north

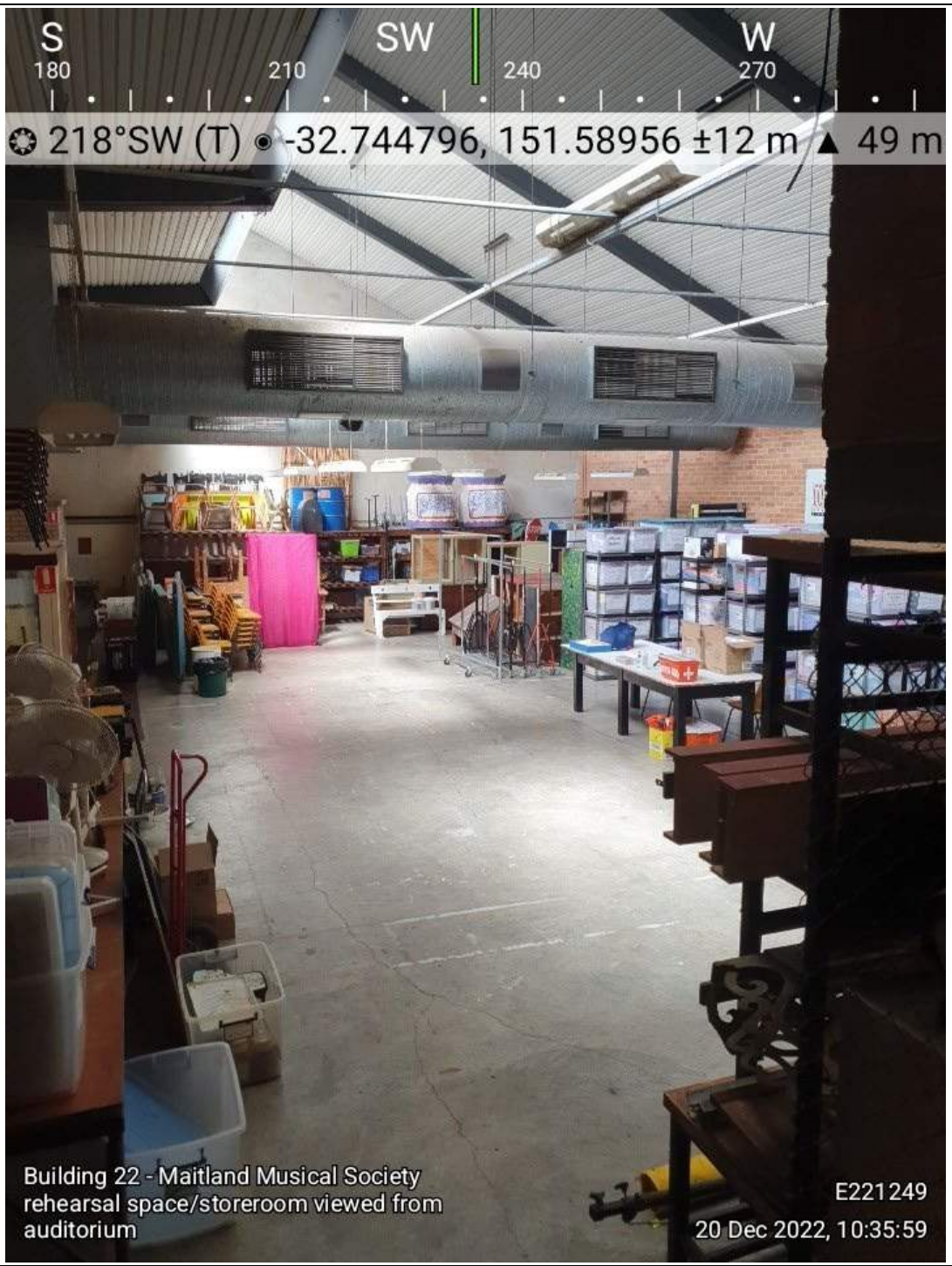

Photo 9
Maitland Musical Society rehearsal space/storeroom as viewed from auditorium entrance
Location: Building 14
Direction: 218° clockwise from north

Photo 10
Shower room as viewed from entrance
Location: Building 22
Direction: 23° clockwise from north

Photo 11
Former laundry/current maintenance workshop as viewed from entrance
Location: Building 22
Direction: 343° clockwise from north

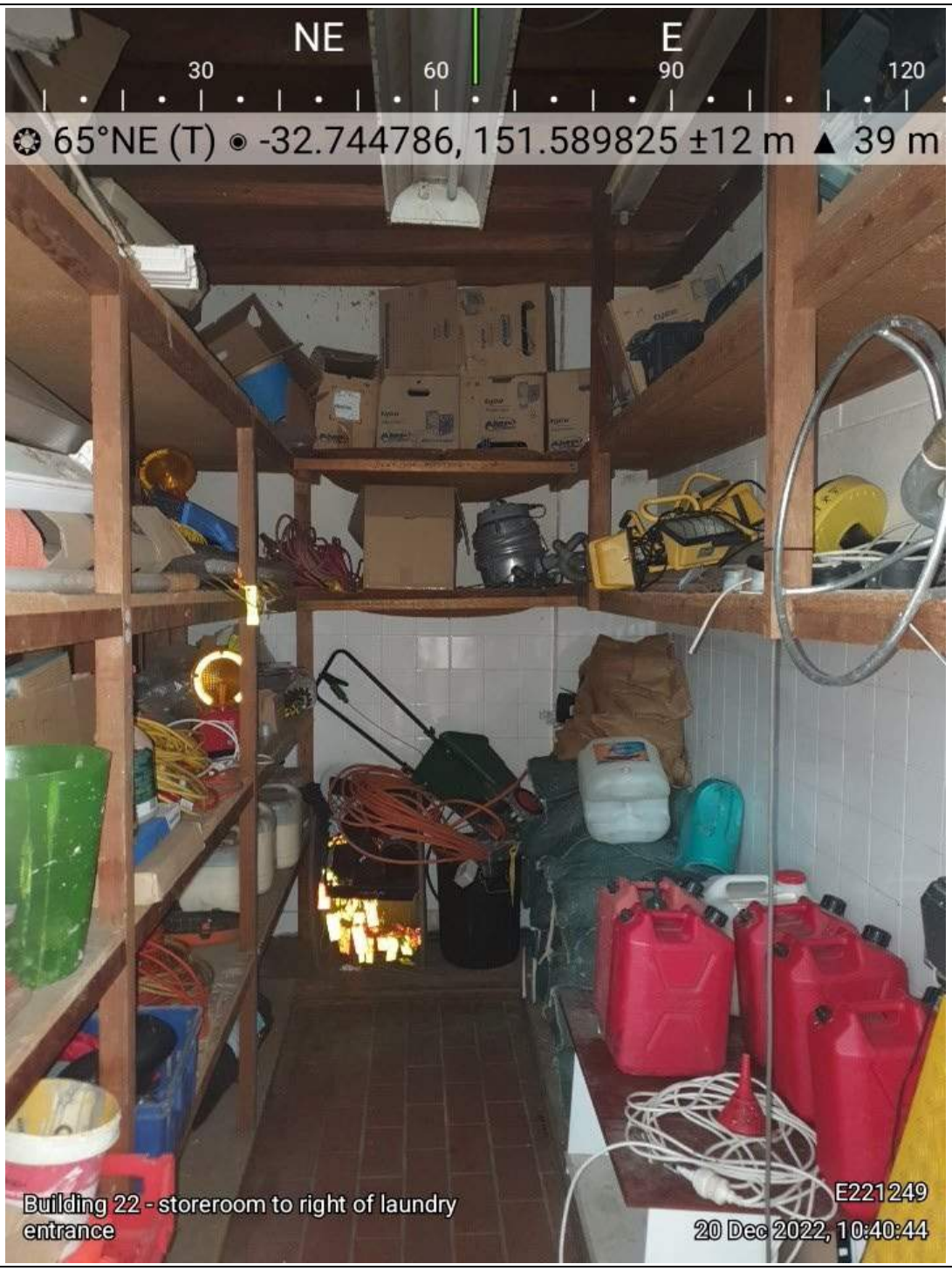

Photo 12
Storeroom to right of former laundry entrance, note 20 L fuel and oil drums. Room had a strong hydrocarbon odour at time of inspection
Location: Building 14
Direction: 65° clockwise from north

Photo 13
Mowers stored in former laundry
Location: Building 22
Direction: 327° clockwise from north

Photo 14

Disused laundry equipment

Location: Building 22

Direction: 349° clockwise from north

Photo 15

Sewer pits looking towards Building 22. Note the disused water feature in the top left of the photo.

Location: West of Building 22

Direction: 105° clockwise from north

Photo 16

Disused legionella treatment plant

Location: Northern corner of Building 22

Direction: 324° clockwise from north

Photo 17

Used kitchen oil. Note the derelict generator in the right of the photo. Building 14 is visible in the left of the photo.

Location: Western corner of Building 14

Direction: 328° clockwise from north

Photo 18

Disused and operational fridges in western garage/storage area

Location: Building 14

Direction: 39° clockwise from north

Photo 19

20 L drum of truckwash near entrance to western garage/storage area

Location: Building 14

Direction: 69° clockwise from north

Photo 20

Southern petrol bowsers. Note that the UPSS vents are visible on the wall of Building 22 in the background

Location: Northwest of Building 14

Direction: 74° clockwise from north

Photo 21

Northern petrol bowser. Building 22 is visible in the background

Location: North-west of Building 14

Direction: 118° clockwise from north

Photo 22

UPSS ventilation risers against the wall of Building 14

Location: North-west of Building 14

Direction: 37° clockwise from north

Photo 23

Disused cooling unit. Building 14 and the UPSS risers are visible in the background

Location: North-west of Building 14

Direction: 194° clockwise from north

Photo 24

Disused legionella treatment plant

Location: Northern corner of Building 14

Direction: 324° clockwise from north

Photo 25

Disused boilers (yellow units) and associated pipes. Note that these are outside of the Site boundary

Location: Northern portion of Building 14

Direction: 75° clockwise from north

Photo 26

Fuel/oil emergency shutoff valve located on corner of boiler room

Location: North-west wall of Building 14

Direction: 132° clockwise from north

Photo 27

Bread and Butter Café entrance

Location: Building 22

Direction: 18° clockwise from north

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St Leonards NSW 2065
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Newcastle NSW 2300
T 02 4907 4800

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Canberra City ACT 2601

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