Phase 1 Due Diligence Assessment

1 Sirius Road, Lane Cove West, NSW

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Distribution

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Executive Summary

Introduction

Senversa was engaged by the Greenbox Architecture (Greenbox) on behalf of AirTrunk Pty Ltd (AirTrunk) to undertake a Phase 1 Acquisition Environmental Due Diligence Assessment (Phase 1) for site located at 1 Sirius Road, Lane Cove West, NSW ('the site').

The site is identified as Lot 1 in Deposited Plan (DP) 1151370 and encompasses approximately 4 hectares (ha). It is Senversa's understanding Greenbox is planning redevelopment of the site for the development of a data centre.

- The site location is shown on **Figure 1** and its layout, on **Figure 2.**

The site is currently undeveloped, however, review of background information and previous investigations indicate that approximately 12,000 m^3 of uncontrolled fill material was imported to the site.

Objectives and Scope of Investigation

The objectives of these works are to undertake a Phase 1 assessment that refines the current understanding of potential contamination at the site and aids Greenbox / AirTrunk in assessing potential constraints / liabilities associated with site contamination that require consideration during site re-development.

To meet these objectives Senversa undertook a Phase 1 Investigation including a review of NSW EPA contaminated land register, historical aerial photographs, groundwater-bore information, relevant government databases, published soil, geology and topographic maps and a site inspection.

Results of Phase 1 ESA

The results of the Phase 1 Investigation indicated the following:

- The site is situated on Triassic Hawkesbury Sandstone of the Mesozoic era. It is defined as medium to coarse grained quartz sandstone with very minor shale and laminate lenses.
- Previous investigations within the site did not identify groundwater, however it is the opinion of Senversa that groundwater is likely to be present at the soil / bedrock interface or within underlying fractured bedrock aquifers.
- The northern most portion of the site is considered to have a low probability (6-70% chance of occurrence) of acid sulphate soils being present with a Class 2 rating. The remainder of the site is considered to have an extremely low probability of occurrence with a Class 5 rating.
- Earliest records indicate the site has been largely undeveloped, with the exception of a tank reported to have contained molasses. (anecdotally demolished in the mid 1990's).
- Approximately 12,000 m3 of fill materials were previously identified within the site and have been confirmed to contain asbestos and elevated concentrations of heavy metals.
- The site has previously been remediated, involving the capping of the fill material in the northern portion of the site with clay. The site has had a history of regulation by the NSW EPA and some constraints are still in place from this, including a 'Notice Maintaining Remediation' (No.28027, 27 September 2005).
- Stockpiled materials of unknown origin are located across the site.
- Senversa notes that in addition to the capped fill materials and surface stockpiles, information within previous reports indicates the potential for the historical burial of drums and other chemical storage containers to have occurred.
- The current and historic surrounding land use is largely industrial with potentially contaminating activities including plastic and chemical manufacturing.

Conclusions and Recommendations

Based on the results of the Phase 1 Investigation, Senversa developed a conceptual site model (CSM) detailing potential source, pathway receptor linkages. The CSM identified that some potentially complete pollutant linkages existed at the site resulting from:

- historical landfilling of the site with uncontrolled fill of unknown origin;
- potential burial of drums and other waste materials;
- potentially impacted stockpiled materials of unknown origin; and
- potentially contaminating activities from surrounding industrial land use.

Based on the information reviewed as part of this Phase 1 Investigation, it is the opinion of Senversa that additional investigation is required to assess the contamination status of the site and further inform potential liabilities/constraints associated with site contamination that may impact the proposed development.

Prior to undertaking further works, a Sampling and Analysis Quality Plan (SAQP) detailing the required Data Quality Objectives for further investigation should be developed.

While the specific requirements of the Detailed Site Investigation (DSI) would be detailed within the SAQP, Senversa considers that the DSI should be undertaken on a systematic and targeted basis in consideration of the identified contaminants of potential concern (CoPCs) and include an assessment of soil and groundwater as follows:

- grid-based sampling across the site to ensure general site conditions and the distribution of fill / natural materials are assessed;
- a targeted sampling approach to characterise potential point sources of contamination (suspected area of historical landfill); and
- the collection of samples from the stockpiled material.

Contents

List of Acronyms

Acronym	Definition
AHD	Australian Height Datum
AMG	Australian Map Grid
AS	Australian Standard
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
COC	Chain of Custody
CoPC	Contaminant of Potential Concern
CSM	Conceptual Site Model
DQI	Data Quality Indicator
DQO	Data Quality Objectives
EIL	Ecologically-Based Investigation Level
EPA	Environment Protection Authority (NSW)
ESL	Ecological Screening Level
ha	Hectare
HIL	Health-Based Investigation Level
HSL	Health Screening Level
m	Metre
m AHD	Metres Australian Height Datum
m bgl	Metres Below Ground Level
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
PAH	Polycyclic Aromatic Hydrocarbons
PFAS	Per and Polyfluoroalkyl Substances
PID	Photo-Ionisation Detector
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling and Analysis Quality Plan
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
VOC	Volatile Organic Compound

1.0 Introduction and Objectives

1.1 Introduction

Senversa was engaged by the Greenbox Architecture (Greenbox) on behalf of AirTrunk Pty Ltd (AirTrunk) to undertake a Phase 1 acquisition environmental due diligence assessment (Phase 1) for the site located at 1 Sirius Road, Lane Cove West, NSW ('the site').

- The site location is shown on **Figure 1** and the layout, on **Figure 2.**

The site is identified as Lot 1 in Deposited Plan (DP) 1151370 and encompasses approximately 4 hectares (ha). Previous investigations undertaken within the site identified approximately 12,000 m^3 of uncontrolled fill material comprising anthropogenic wastes (stoneware and porcelain jars), demolition rubble, ash, coke, broken bricks, concrete and asbestos. It is Senversa's understanding Greenbox is planning redevelopment of the site for the development of a data centre.

1.2 Objectives

The objectives of these works are to undertake a Phase 1 assessment that refines the current understanding of potential contamination at the site and aids Greenbox / AirTrunk in assessing potential constraints / liabilities associated with site contamination that require consideration during site re-development.

1.3 Scope of Work

To meet the project objectives, Senversa completed the following scope of works:

- Review of background information relating to the site, including:
  - Previous investigations relating to site contamination.
  - The NSW Environment Protection Authority (EPA) Contaminated Land Register.
  - Historical aerial photographs.
  - Groundwater bore information.
  - Relevant government databases.
  - Published soil, geology and topographic maps.
- A site inspection reviews current site land-use and ground-truth' the background information.
- Data evaluation and reporting.

Investigative work was conducted with reference to relevant parts of the following guidelines:

- National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM (1999)) (as amended May 2013) - herein referred to as the ASC NEPM (2013).
- NSW EPA (2017). Guidelines for the NSW Site Auditor Scheme (3rd edition).
- Office of Environment and Heritage (2011). Guidelines for Consultants Reporting on Contaminated Sites.

2.0 Site Identification

The site identification information is presented within the table below:

Item	Relevant Site Information
Site Address	1 Sirius Road, Lane Cove West NSW 2066
Legal Description	Lot 1 DP 1151370
Local Government Area	Lane Cove Council
Site Elevation (m AHD)	2 – 34 m AHD
Site Location	Figure 1
Site Plan	Figure 2

3.0 Site Background Review

3.1 Site Setting

The following sections summarise the information obtained during the site background and history review.

- A copy of database search results is provided in **Appendix A**.

Table 2.0 Site Description

Item	Relevant Site Information
Site Location	1 Sirius Road, Lane Cove West NSW 2066
Site Area	Approximately 4 ha
Current Zoning	Light Industrial – IN2
Current land Use	The site is currently unused. However, it is noted there has been recent unauthorised access to the site with illegal tipping and stockpiling of waste soil materials. Senversa notes that electrical pylons and high voltage cables are located on the south and south western boundary of the site and may therefore have an electrical easement over some or part of it.
Surrounding Land Uses	The land uses surrounding the site were as follows: • **North:** Pumphouse Lane Cove bushwalk, and adjacent bushland is located on the northern boundary of the site followed by Stringybark Creek (a tributary to the Lane Cove River) runs parallel to the northern boundary of the site. A Meriton hotel is located approximately 400 m north of the site followed by Epping Road then low-density residential dwellings and commercial / industrial office park facilities. • **East:** Sirius Road is located on the eastern boundary of the site followed by commercial industrial development (Symbio Laboratories Sydney, Plastic Tooling Manufacturing, Alto Hyundai Service Centre, Concise Bodyworks, HMA POGC Sensor Technology and SC Johnson & Sons Pty Ltd) then low density residential / undeveloped bushland. • **South:** the southwest of the site bordering the Lane Cove River is undeveloped bushland. Directly south and to the southeast industrial use (Kanes Hire Pty Ltd, Definitive Car Detailing, Road Runner Mobile Tyres, Combined Towing Services NSW and Ausgrid Lane Cove). • **West:** bushland and the Lane Cove River borders the site to the west. Beyond this is the Boobajool Reserve, Gwandalan Reserve and Magdala Park.
Topography	The elevation of the site ranges from 2 to 34 m AHD. • The site generally slopes towards the adjacent Lane Cover Rover and Stringybark Creek. The site has a moderate to steep slope from the eastern entry point of the site toward Stringybark Creek and the Lane Cove River where it plateaus adjacent the northern border. There is a crest that runs east-west, decreasing in gradient toward the west, along the centre of the site that slopes in either direction. • Reginal topography is comprised of low / undulating hills and valleys. A number of rivers / creeks are located at the base of valleys.
Hydrology	• During the site inspection, no surface water was observed onsite. However, Lane Cove River and Stringybark Creek are located immediately adjacent to the north and west of the site (see figure 2). • Several engineered drainage channels are located across the site, it is anticipated that they are in place to facilitate surface water flow toward both Lane Cove River and Stringybark Creek and reduce the flooding potential of the lower elevations of the site. • As the site is largely unsealed, rainfall is expected to infiltrate the sites surface or flow towards the adjacent Lane Cove River / Stringybark Creek.

Item	Relevant Site Information
	• Based on observations made during the site inspection, it is expected that Stringybark Creek flows east – west and feeds into Lane Cove River, which flows north – south where it joins the Parramatta River.
Geology, Soils, Acid Sulphate Soils and Naturally occurring Asbestos	Drilling logs presented within Appendix A indicate that the encountered lithology within boreholes excavated within the surrounding area was generally comprised of shallow fill materials overlying shale / siltstone and weathered sandstone. Based on a review of the Geological Survey of NSW 1:100 000 Sydney geological map, the site is situated on Triassic Hawkesbury Sandstone of the Mesozoic era. It is defined as medium to coarse grained quartz sandstone with very minor shale and laminate lenses. Based on review of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Australian Soil Resource Information System (ASRIS), the site is located on two soil landscapes, the Lane Cove and Gymea landscapes. The Lane Cove Soil Landscape is considered to have the following attributes: • Level to gently undulating alluvial floodplain draining both the Wianamatta Group shales and Hawkesbury Sandstone. • Local relief of < 5 m and slopes of < 5%. • Partially cleared tall open-forest with disturbed grass understorey. • Soils are considered deep (>200 cm) alluvial loams and various buried alluvial and marine soils. • At risk of flooding, high soil erosion and seasonal waterlogging. The Gymea Soil Landscape has the following attributes: • Undulating to rolling rises and low hills on Hawkesbury Sandstone. • Local relief 20-80 m, with slopes of 10-25% and rock outcrops < 25%. • Broad convex crests, moderately inclined side slopes with wide benches. • Extensively cleared open-forest and eucalypt woodland. • Soils characterised as; ▪ Shallow to moderately deep (30-100 cm) yellow earths and earthy sands on crests; ▪ shallow (<20 cm) siliceous sands on leading edges of benches; ▪ localised gleyed, podzolic soils and yellow podzolic sands on shale lenses; and ▪ shallow to moderately deep (<100 cm) siliceous sands and leached sands along drainage lines. The ASRIS Atlas of Australian Acid Sulfate Soils and Salinity suggests that the northern most portion of the site is considered to have a low probability (6-70% chance of occurrence) of acid sulphate soils being present, having a Class 2 rating (See **Map 3a** in **Appendix A**). The remaining portion of the site is considered to have an extremely low probability of occurrence with a Class 5 rating (See **Map 3a** in **Appendix A**). The site is not located within an area reported to have naturally occurring asbestos.
Hydrogeology	A search of the NSW Department of Primary Industry (DPI) database of registered groundwater bores within a 2 km radius of the site identified 25 registered bores. However, there were no bores registered within the site and all identified bores were in excess of 1 km from the site. The registered bores were identified as for monitoring, industrial and recreational use. The bores range from depths of 6.0 m bgl and 182.5 m bgl. The closest existing bore that reports depth and water level (GW112648) was drilled to 11.3 m bgl for monitoring use and is located approximately 1.3 km north-west of the site. The standing water level was reported to be 10.59 m bgl. As the monitoring well is located a considerable distance from the site and within an unknown topography, it is considered unlikely to be representative of the hydrogeological conditions on the site. Based on groundwater database information and previous investigations we consider that groundwater is likely to be present at a depth of approximately 2.0 – 4.0 m bgl. Aquifers within the local and regional lithology are described as porous, extensive aquifers of low to moderate productivity.

3.2 Site History

3.2.1 Aerial Photography

Aerial Photographs using a 500 m buffer (**Appendix A**) were reviewed as part of the assessment of the site history. The following information was obtained:

Item	Description
1930 – Black and White	**Site** – the site appears to be undeveloped bushland. **Surrounds** – the surrounding area is largely bushland with some areas of development occurring to the north-east and south-east. Madgala Park is already established to the north-west.
1943 – Black and White	**Site** – the site remains primarily undeveloped bushland with the exception of a large above ground storage tank (AST) located within the north western corner of the site. The area surrounding the tank (on the northern boundary) has been cleared. **Surrounds** – An industrial facility has been constructed immediately adjacent to the northern site boundary and appears to be associated with the onsite AST. The facility was comprised of several interconnected buildings and what appear to be a number of ASTs throughout the site. Additional industrial facilities have been developed to the north and south of the site, however the specific nature of these industries in unknown.
1956 – Black and White	**Site** – the site remains largely unchanged since previously aerial photography with the exception of minor vegetation clearance / die back in the central portion of the site. **Surrounds** – Mars Road and Sirius Road have been constructed and appear consistent with the current layout / configuration. Low-density residential development had occurred to the north east of the site. Additional industrial development was occurring to the south and south east of the site.
1961 – Black and White	**Site -** two large stockpiles of material are visible within the south western portion of the site. The northern portion of the site appears to have been utilised for storage of equipment / waste materials from the adjacent industrial facility. Stockpiles of soil are visible in the northern portion of the site and appear to have narrowed the entrance to Stringybark creek. **Surrounds** – low density residential development is occurring the north, south west and south east of the site. Additional industrial development is occurring immediately adjacent to the eastern boundary of the site and to the south and south east of the site.
1975 – Black and White	**Site** – the site remains largely unchanged since previous aerial photography with the exception of vegetation regrowth within the central portion of the site. **Surrounds** – the adjacent industrial area located to the east of the site has been further developed. The remaining surrounding area remains largely unchanged since previous aerial photography.
1994 - Colour	**Site** – the site remains largely unchanged since previously aerial photography with the exception of vegetation regrowth within the central portion of the site. **Surrounds** – the industrial facility located immediately to the north of the site appears to have been redeveloped. The facility is now comprised of a single large commercial warehouse style building and carparking. The remaining surrounding area remains largely unchanged since previous aerial photography.
2004 - Colour	**Site** – the AST located within the north western corner if the site has been removed, however the northern portion of the site remains cleared and appears to be grass covered. the site remains largely unchanged since previously aerial photography. **Surrounds** – the facility has been constructed to the north of the site and additional commercial buildings have been developed to the east within the industrial park, the remainder of the surrounding area appears to be unchanged from previous aerial photography.

Item	Description
2010 - Colour	**Site** – the central portion of the site has been cleared and appears to be used for illegal dumping / stockpiling of soils. Several small stockpiles of soil are visible within the central portion of the site. An unsealed access drive has been created from Sirius road to the centre of the site. **Surrounds** – the surrounding area is largely unchanged from previous aerial photography with the exception of some redevelopment of existing commercial buildings to the north and east of the site.
2014 - Colour	**Site** – no significant change from previous aerial photography. **Surrounds** – no significant change from previous aerial photography.
2018 - Colour	**Site** – The site has been subject to significant vegetation clearance with vegetation only remaining on the north eastern and south eastern corners of the site. Stockpiles of soil materials are visible across the site surface, in particular within the central portion of the site. **Surrounds** – No significant change from previous aerial photography.

3.2.2 NSW EPA Contaminated Land Search

A search of the NSW EPA contaminated land database undertaken for the site and a 1 km buffer area provided in **Appendix A** indicated the following record of notices issued under the Contaminated Land Management (CLM) Act 1997:

- Pacific Power (Site ID 3039) formerly located onsite under the previous identifier of Lot 1, DP 546860, 1 Sirius Road, Lane Cove. One current and eight former notices issued under the CLM Act 1997.

The following sites are listed as having been notified as contaminated to the EPA:

- Pacific Power formerly located onsite at Sirius Road, Lane Cove. The activity that caused the contamination is landfill and the EPA Site Management Class the site is currently categorised as is "Contaminated formerly regulated under the CLM Act".
- Ventemans Reach Bushland located off Mars Road, Lane Cove. The activity that caused the contamination is described as 'unclassified' and the EPA Site Management Class the site is currently categorised as is 'Under Assessment'.

3.2.3 NSW EPA Licensed Activities Search

A search of licences issued under the Protection of the Environment Operations Act (POEO) 1997 within a 500 m radius of the site was undertaken, the following table summarises current licences held under the Act. See **Appendix A, Map 8**.

ELP Number	Licence Holder	Location Name	Address	Fee Based Activity	Distance from the Site (m)	Direction
518	Ingredion ANZ Pty Ltd	Ingredion	170 Epping Road Lane Cove	General agricultural processing	340	north

3.2.4 Delicenced Activities (still regulated by the EPA), Licence Surrendered, Clean Up and Penalty Notices

The following table summarises delicenced premises still regulated by EPA, licences surrendered, clean-up and penalty notices within a 500 m radius of the site. See **Appendix A, Map 8.**

Licence Number	Licence Holder	Location Name	Address	Fee Based Activity	Status	Distance from the Site (m)	Direction
2248	S.C. Johnson & Son Pty Ltd	S.C. Johnson	160 Epping Road Lane Cove	Chemical production waste generation	Surrendered	0.00	North
6687	Industrial & Decorative Gold Plating Co Pty Ltd	Industrial & Decorative Gold Plating	79-81 Mars Road lane Cove	Hazardous Industrial or Group A Waste Generation or Storage	Delicenced	61	East
6687	Machin & Ewen Pty Ltd	Machin & Ewen Pty Ltd	Cnr Mars & Sirius Roads Lane Cove	Hazardous Industrial or Group A Waste Generation or Storage	Delicenced	240	South
6595	Cochlear Limited	Cochlear Limited	14-16 Mars Road Lane Cove	Hazardous Industrial or Group A Waste Generation or Storage	Delicenced	360	South-east
12076	John Holland Pty Ltd	Lane Cove Tunnel Project	Epping Road	Road Construction	Surrendered	360	North-east
11801	Cap-Xx Pty Ltd	CAP-XX	9-10/12 Mars Road Lane Cove	Hazardous Industrial or Group A Waste Generation or Storage	Delicenced	395	South-east
1024596	Penford Australia Limited	Ingredion	170 Epping Road Lane Cove	s.91 Clean Up Action - Licensed	Issued	342	North
1024892	Penford Australia Limited	Ingredion	170 Epping Road Lane Cove	s.91 Clean Up Action - Licensed	Issued	342	North

3.2.5 National Pollution Inventory Industrial Facilities

A search of the National Pollution Inventory (NPI) using a 500 m buffer of the site was undertaken. Facilities that trigger a defined threshold for the emission of pollutants identified in the NPI must estimate and report their emissions. The following sites were identified in the inventory.

Facility Name	Address	Primary ANZSIC Class	Reporting Year	Distance (m)	Direction
S. C. Johnson and Son Pty Ltd	160 Epping Road Lane Cove	Basic inorganic chemical manufacturing	2010/2011	0	North
Ingredion ANZ Pty Ltd	170 Epping Road lane Cove	Grain mill product manufacturing	2016/2017	342	North

3.2.6 NSW EPA PFAS Investigation Program

A search of the NSW EPA PFAS Investigation Program database indicated that no records of investigations being undertaken as part of the NSW EPA PFAS Program were held for the site and surroundings **(Appendix A)**.

3.2.7 Historical Landfills

A search of historical landfill records the site and surrounding area was undertaken. The results of the search area summarised below, and provided within **Appendix A.**

Site	Location	Distance	Direction
Blackmans Park	Blackmans Park and Sporting Field, Lloyd Rees Drive, Lane Cove	469	South

3.2.8 Other Potentially Contaminating Sites

A search of registered land uses within the site and surrounding area was undertaken. The results of the search area summarised below, and provided within **Appendix A.** The search identified several current land uses that may result in potential contamination including:

- Laboratories.
- Plastic manufacturing.
- Vehicle service centres / detailing / tyre yards.
- Industrial equipment suppliers / repairs.
- Agrosciences testing laboratories / biotechnology facilities.
- Cleaning product suppliers.

3.2.9 Historical Business Records

A search of historical business records for the site and surrounding area (500 m radius) was undertaken from the 1930s to the 1990s. The results of the search area summarised below, and a copy of historical business records is provided within **Appendix A**.

Year of Records	Listed business types
1990s Business Records	The following land uses were identified either onsite or within 100 m of the site boundary: • Polyethylene products. • Printers. • Medical / surgical supplies. • Electrical motor repairs and manufacturing. • Furniture manufacturing. • Insulation contractors / manufacturers. • Plastic manufacturer / wholesalers. • Graphite manufacturer. • Electroplating. • Compressed air equipment. The following land uses were identified to be located greater than 100 m from the site: • Adhesive manufacturer. • Agricultural chemicals. • Colour and pigment manufacturers. • Fibreglass manufacturer. • Pharmaceutical manufacturers. • Garbage disposal units.

Year of Records	Listed business types
	• Incinerators. • Water softeners and treatment. • Fuse manufacturer. • Glass manufacturer. • Garbage collection.
1980's Business Records	The following land uses were identified either onsite or within 100 m of the site boundary: • Medical / surgical supplies. • Electrical motor repairs and manufacturing. • Furniture manufacturing. • Insulation contractors / manufacturers. • Plastic manufacturer / wholesalers. • Graphite manufacturer. • Electroplating. • Compressed air equipment. The following land uses were identified to be located greater than 100 m from the site: • Adhesive manufacturer. • Agricultural chemicals. • Colour and pigment manufacturers. • Fibreglass manufacturer. • Pharmaceutical manufacturers. • Garbage disposal units. • Incinerators. • Water softeners and treatment. • Fuse manufacturer. • Glass manufacturer. • Garbage collection.
1970's Business Records	The following land uses were identified either onsite or within 100 m of the site boundary: • Agricultural chemical manufacturers. • Cleanser and cleaner manufacturers. • Sheep dip and branding oil manufacturers. • Soap manufacturers. • Electrical, mining and flameproof manufacturers. • Electroplaters. The following land uses were identified to be located greater than 100m from the site • Glass manufacturer. • Garbage collection. • Corrosion prevention / rust solvent manufacturer. • Septic tank manufacturer. • Insecticide manufacturer. • Boilermakers. • Engineering (Precision / Repetition). • Tool makers. • Paper manufacturers / convertors etc. • Taxi / truck operators. • Vet supplies. • Chemical manufacturers. • Electrical switchboard manufacturers.
1950's Business Records	• Graphite manufacturers. • Medical supplies.

Year of Records	Listed business types
	• Poultry farmers and dealers.
1940's Business Records	• No records.
1930's Business Records	• No records.

3.2.10 Summary of Previous Investigations

In undertaking this Phase 1 Investigation Senversa undertook a review of the following previous reports

- NSW EPA Notice Maintaining Remediation' (No.28027, 27 September 2005) (NSW EPA 2005).
- Environmental Investigations Australia (EIA) 2006, Environmental Site Assessment, 1 Sirius Road, Lane Cove, NSW, 3 July 2006. (EIA 2006).
- EIA (2007), Remedial Action Plan, 1 Sirius Road, Lane Cove, NSW, 31 January 2007. (EIA 2007).

Senversa notes that the following previous investigations have been undertaken within the site but at the time of this report have not been provided to Senversa, as such Senversa is relying on information summarised within EIA 2006 and EIA 2007.

- Dames and Moore (1991) Letter report Geotechnical Investigation, Lane Cove Site D&M Ref NKN-dsk3.
- Golden Mackay Pty Ltd (1991) Land at Lane Cove Historical and Archaeological Assessment (April 1991).
- Dames and Moore (1991) Environmental Survey, Lane Cove Substation for Electricity Commission of NSW D&M Ref 13503-027-70.
- Dames and Moore (1993) Additional Sampling and Biota Sampling, Sirius Road, Lane Cove for Pacific Power.
- Pacific Power Services (1994) Remediation of Lot 1, Sirius Road, Lane Cove – Technical Specifications of Proposed Works.
- Pacific Power International – Environmental Services (August 1999) Lane Cove Site: Assessment of Iron Satin Seepage from Contaminated Area (August 1999).
- Dames and Moore (2000) Letter Report, Additional Testing to Assess Risk of Harm, Lot 1 Sirius Road D&M Ref 13503-042-371.

EIA provided a summary of the above previous investigations undertaken within the Site. Dames and Moore (D&M) undertook assessment of the site involving the collection of soil and water samples from test pits and the collection of mollusc samples from the adjacent waterways.

Visual and olfactory evidence of contamination was identified within samples collected from the northern flat area. Analytical results of collected samples returned concentrations of Contaminants of Potential Concern (CoPCs) (primarily hydrocarbons and heavy metals) exceeding the adopted assessment criteria.

Collected water samples were also identified to contain elevated concentrations of CoPCs which were considered to be a result of on-site sources rather than in-flushing tidal waters. Intertidal sediments were identified to contain elevated concentrations of heavy metals.

D&M concluded that contamination within the site was likely to be restricted to fill soils in the vicinity of the river flat area adjacent to Stringybark Creek caused by the disposal of waste products, burials of drums and porcelain acid containers and primarily transported via water infiltrating in to the site following rainfall events.

The recommended remedial strategy for the site involved containing contamination by construction of a clay cap. Fill was to be encapsulated by clean low permeability clay and topsoil and the disused molasses tank to be demolished and disposed appropriately.

It was estimated that approximately 12,000 m^3 of materials were capped in an area covering 6509 m^2. The capping layer comprised low permeability clay and rock/ gravel compacted in 0.15 m layers to an overall reported thickness of 1.0 m.

Following completion of capping works, a groundwater assessment involving the sampling from six groundwater wells was undertaken to confirm the successful construction of the capping layer. The requirements for site remediation were formally considered as complete by the NSW EPA in 1996.

Additional investigations were undertaken in 1999 following a decision by Pacific Power to divest the site. Samples of iron stained deposits overlying mangrove sediments and seepage from drainage channels / gabion walls were collected and analysed for relevant CoPCs.

Iron staining on mangrove sediments was determined to be a reduction in visual amenity rather than significant contamination resulting from the onsite encapsulation area. It was; however, recommended that the materials be removed and appropriately disposed.

Based on analytical results of collected samples, D&M concluded that the iron rich leachate was from oxidation of acid sulphate soils on which the gabion walls had been constructed or from excavated natural soils used as fill behind the walls and that the process was likely still active.

NSW EPA (2005)

The NSW EPA placed a number of constraints on the site within the Notice Maintaining Remediation' (No.28027, 27 September 2005). These included:

- "The Environment Protection Authority… requires the recipient to maintain the following remediation actions in relation to the land:
    a) The recipient must obtain the prior written approval of the EPA to any works that are to be carried out on the land, whether or not the works are carried out by the recipient, for the purposes of:
        i. covering, dispersing or reducing the contamination of the land; or
        ii. restoring or rehabilitating the land; or
        iii. removing or disposing of any soil, sand, rock, water, or any other solid or liquid material of any kind from the land; and
    b) the recipient must maintain the land in a manner that maintains the integrity and impermeability of the clay capping which is on the land, including selection of vegetation with root systems that do not grow into the clay capping layer; and
    c) the recipient must not undertake any work, or cause, permit or allow the undertaking of any work which would result in any disturbance to, or modification of the clay capping layer unless the prior written approval of the undertaking has been obtained from the EPA and the work is undertaken in accordance with any conditions of that approval."
- Failure to comply with these conditions would be an offence.
- Pursuant to action (b) of the above, the site appears to have been clay capped at some point in the past. The extent, integrity and details of the cap are unknown.

Also "At least 30 days prior to the recipient selling, transferring, leasing or otherwise relinquishing ownership or occupation of the land or any part of the land, the recipient must give written notification of this to the EPA and of the name and contract details of the prospective owner or occupier."

EIA (2006)

EIA was engaged by Demian Developments Pty Ltd (Demian) to conduct an environmental site assessment to assess the presence and extent of contamination onsite.

The investigation consisted of the excavation and subsequent sampling of 20 test pits and the sample collection from three stockpiles.

Analytical results from collected samples reported exceedances of the adopted site criteria for lead and the detection of asbestos fibres in two of the 20 test pits. Observations and laboratory analysis reported unoxidized sulphur compounds were present in material described as dark coloured buried fill, indicating the presence of potential acid sulphate soils (PASS) in this area. The investigation recommended the following:

- material found in the northern river flat of the site and described as dark coloured buried fill be left undisturbed to avoid oxidation of the sulphur compounds;
- hand picking and offsite disposal of asbestos fragments, building waste and scrap metal;
- surficial excavation and offsite disposal of filing materials from areas contaminated by asbestos fragments and fibres; and
- validation of works against the adopted assessment criteria and implementation of health and safety measures post remediation.

EIA (2007)

EIA was commissioned by Demian to prepare a remedial action plan (RAP) to outline appropriate process for the remediation and validation of soil contamination identified in previous investigations. The proposed remedial works included:

- General site clean-up including collection and disposal of onsite wastes (metals / building wastes etc.) and handpicking of fibre cement sheeting (FCS).
- Excavation of onsite fill materials and offsite disposal to a suitably licenced landfill facility.
- Validation of all excavation areas.
- Preparation of a remediation and validation report describing the works conducted and suitability of the site.

Upon completion of remedial works, EI considered that the site could be made suitable for the proposed residential / commercial land use.

3.3 Site Inspection

A site inspection was undertaken by Senversa environmental scientists Roxanne McKinnon and Eleanor Liddle on 3rd October 2018.

At the time of the site inspection the site was accessed via a chain-link gate on the eastern boundary off Sirius road. Several large cement blocks were place by the gate within the site boundary to prevent vehicle entry. The site boundary was well defined with a chain-link fence.

At the time of the inspection, the site largely cleared of large vegetation and consisted of grass and highly disturbed shrubs with areas along the eastern perimeter consisting of small patches of eucalypts and other large trees.

The site sloped steeply from east to west with sandstone outcroppings observed in the east of the site with steep gradients occurring close to the border. Low dark green vegetation, likely associated with high water levels, were found within the plateaued areas of the site in the north west and south west.

An access road from the eastern entry point of the site ran through the central portion to connect to the low-lying western area. The road was predominately rubble / dirt, however, was noted to be comprised of bitumen within a small section approximately 20 m from the gate.

An area of hardstand was located within the eastern portion of the site adjacent to the fence line. An abandoned piece of construction equipment was observed adjacent to the hardstand area, while the specific use of this equipment is unknown Senversa notes it appeared to be gas fired and connected to three phase power cables (See **Appendix B**.).

Approximately 100-150 small stockpiles of material were observed in the central and western portion of the site. The stockpiles appeared segregated by material type (fill, clay and two types of crushed rock) and were labelled with wooden stakes. An abandoned excavator was located within the central

portion of the site and was presumably utilised for soil movement / stockpiling within the site. Anecdotal evidence suggest that the material had been illegally fly-tipped.

During the site inspection no evidence of staining or other significant indications of anthropogenic contamination were noted on the site surface. No evidence of the former AST was visible during the site inspection and the area identified to be “capped” appeared to have remained undisturbed since previous investigations undertaken within the Site.

Sediment bunding was observed along the perimeter of the site to the west, north and south (see Appendix B). Engineering water channels in the northern portion of the site were observed to facilitate surface water flow to the north toward Stringybark Creek and north-west toward Lane Cove River.

Senversa notes that during the site inspection vegetation within the site and surrounding area appeared to be healthy and free from stress and no signs of sheen or odour was noted within the surrounding surface waters of the Lane Cove River and Stringybark Creek.

4.0 Preliminary Conceptual Site Model

4.1 Potential Sources of Contamination

Based on the site history, background data and Senversa's professional experience, the CoPCs associated with current and historical land uses undertaken within the site and surrounding area are considered to include the following:

Potential Source		Contaminants of Potential Concern	Comment
On-Site	• Potential Source 1 – Historical site uses / Fill material of unknown origin, including buried drums, acid containers etc.	• Acid Sulphate Soils (ASS) organochlorine and organophosphorus pesticides (OCP / OPP), total recoverable hydrocarbons (TRH); semi / volatile organic compounds (SVOC / VOC), chlorinated solvents (trichloroethene (TCE) and tetrachloroethene (PCE)), benzene, toluene, ethylbenzene and xylenes (BTEX); heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc); polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), nutrients, phthalates and per and polyfluoroalkyl substances (PFAS). Landfill gas (predominantly methane and carbon dioxide).	• Potential landfilling activities across the northern portion of the site with the material of unknown origin.
	• Potential Source 2 – Stockpiled soil of unknown origin.	• TRH, BTEX, PAH, PCBs, OCP / OPP heavy metals and asbestos.	• As the origin of the material is unknown, a standard suite of common contaminants of concern have been selected.
Off-Site	• Potential Source 3: Current and historical surrounding commercial / industrial land uses	• ASS, PFAS, PCBs, TRH, BTEX, VOCs, heavy metals and pesticides (OCP / OPP).	• The surrounding area has historically been utilised for a range of commercial / industrial land uses utilising various chemicals and potentially contaminating land uses.

4.2 Potential Pathways

The primary potential exposure pathways of concern at the site are:

- Inhalation of vapour (from soil and/or groundwater) and contaminated dust (from soils).
- Dermal contact and/or incidental ingestion with contaminated soils.
- Transport of contamination through surface water flows.
- Transport of contamination to underlying groundwater aquifers.
- Transport of contaminants through mechanical transport.

4.3 Potential Receptors

Key receptors have been identified as:

- Future site users.
- Workers carrying out the development of the site (short term).
- Groundwater beneath the site.
- Adjacent sensitive receptors e.g. Lane Cove River and Stringybark Creek.

4.4 Potential and Complete Exposure Pathways

The proposed future use of the site is unlikely to permit direct contact to the soil. However, it is likely that during the course of construction or sub-surface maintenance works exposure to site soils. For these scenarios, the potential exposure pathways by which the previously identified receptors may be impacted include:

- Construction and maintenance workers' direct contact with contaminated site soils, inhalation of dust and ingestion through poor hygiene.
- Exposure to vapours / landfill gas by future site users.
- Plant health from landscaping areas being developed within contaminated site soils.
- Contamination leaching from soil to groundwater.
- Stormwater runoff from unpaved surfaces containing contaminated soils / sediment.

4.5 Qualitative Evaluation of Environmental Risk

As outlined within the CSM presented above, Senversa considers there to be potentially complete pollutant linkages at the site resulting from:

- historical landfilling of the site with material of unknown origin,
- potentially impacted stockpiled materials of unknown origin, and
- potentially contaminating activities from surrounding industrial land use

Based on information reviewed as part of this Phase 1, it is the opinion of Senversa that additional investigation is required to assess the contamination status of the site. Senversa notes that in addition to the capped fill materials and surface stockpiles, information within previous reports indicates the potential for the historical burial of drums and other chemical storage containers to have occurred. As such any sampling program should be undertaken to assess the potential for additional / unexpected burial areas to be present within the site. This should include a grid-based test pitting program to assess the distribution of both fill and natural materials within the site.

Prior to undertaking further works, NSW EPA are to be notified / consulted as per the requirements of the site management order and a Sampling and Analysis Quality Plan (SAQP) detailing the required Data Quality Objectives for further investigation should be developed. The SAQP should also describe how cap integrity will be maintained throughout the investigation.

5.0 Conclusions and Recommendations

Introduction

Senversa was engaged by Greenbox on behalf of AirTrunk to undertake a Phase 1 Investigation for 1 Sirius Road, Lane Cove West, NSW ('the site'). The site is identified as Lot 1 in Deposited Plan (DP) 1151370 and encompasses approximately 4 hectares (ha). It is Senversa's understanding Greenbox is planning redevelopment of the site for the development of a data centre.

Objectives and Scope of Investigation

The objectives of these works are to undertake a Phase 1 assessment that refines the current understanding of potential contamination at the site and aids Greenbox / AirTrunk in assessing potential constraints / liabilities associated with site contamination that require consideration during site re-development.

To meet these objectives Senversa undertook a Phase 1 Investigation including a review of NSW EPA contaminated land register, historical aerial photographs, groundwater-bore information, relevant government databases, published soil, geology and topographic maps and a site inspection.

Results of Phase 1 ESA

The results of the Phase 1 investigation indicated the following:

- The site is situated on Triassic Hawkesbury Sandstone of the Mesozoic era. It is defined as medium to coarse grained quartz sandstone with very minor shale and laminate lenses.
- Previous investigations within the site did not identify groundwater, however it is the opinion of Senversa that groundwater is likely to be present at the soil / bedrock interface or within underlying fractured bedrock aquifers.
- The northern most portion of the site is considered to have a low probability (6-70% chance of occurrence) of acid sulphate soils being present with a Class 2 rating. The remainder of the site is considered to have an extremely low probability of occurrence with a Class 5 rating.
- Earliest records indicate the site has been largely undeveloped, with the exception of a tank reported to have contained molasses (anecdotally demolished in the mid 1990's).
- Approximately 12,000 m^3 of fill materials were previously identified within the site and have been confirmed to contain asbestos and elevated concentrations of heavy metals.
- The site has previously been remediated, involving the capping of the fill material in the northern portion of the site with clay. The site has had a history of regulation by the NSW EPA and some constraints are still in place from this, including a 'Notice Maintaining Remediation' (No.28027, 27 September 2005).
- Stockpiled materials of unknown origin are located across the site.
- Senversa notes that in addition to the capped fill materials and surface stockpiles, information within previous reports indicates the potential for the historical burial of drums and other chemical storage containers to have occurred.
- The current and historic surrounding land use is largely industrial with potentially contaminating activities including plastic and chemical manufacturing.

Conclusions and Recommendations

Based on the results of the Phase 1 Investigation, Senversa developed a CSM detailing potential source, pathway receptor linkages. The CSM identified that some potentially complete pollutant linkages existed at the site resulting from:

- historical landfilling of the site with uncontrolled fill of unknown origin,
- potential burial of drums and other waste materials.
- potentially impacted stockpiled materials of unknown origin, and

- potentially contaminating activities from surrounding industrial land use

Based on the information reviewed as part of this Phase 1 Investigation, it is the opinion of Senversa that additional investigation is required to assess the contamination status of the site and further inform potential liabilities / constraints associated with site contamination that may impact the proposed development.

Prior to undertaking further works, a Sampling and Analysis Quality Plan (SAQP) detailing the required Data Quality Objectives for further investigation should be developed.

While the specific requirements of the Detailed Site Investigation (DSI) would be detailed within the SAQP, Senversa considers that the DSI should be undertaken on a systematic and targeted basis in consideration of the identified contaminants of potential concern (CoPCs) and include an assessment of soil and groundwater as follows:

- grid-based sampling across the site to ensure general site conditions and the distribution of fill / natural materials are assessed;
- a targeted sampling approach to characterise potential point sources of contamination (suspected area of historical landfill); and
- the collection of samples from the stockpiled material.

6.0 Principles and Limitations of Investigation

The following principles (summarised in **Table 9.1**) are an integral part of site contamination assessment practices and are intended to be referred to in resolving any ambiguity or exercising such discretion as is accorded the user or site assessor.

Table 9.1 Summary of General Principles and Limitations

Area	Field Observations and Analytical Results
Elimination of Uncertainty	Some uncertainty is inherent in all site investigations. Furthermore, any sample, either surface or subsurface, taken for chemical testing may or may not be representative of a larger population or area. Professional judgment and interpretation are inherent in the process, and even when exercised in accordance with objective scientific principles, uncertainty is inevitable. Additional assessment beyond that which was reasonably undertaken may reduce the uncertainty.
Failure to Detect	Even when site investigation work is executed competently and in accordance with the appropriate Australian guidance, such as the National Environmental Protection (Assessment of Site Contamination) Amendment Measure ('the NEPM'), it must be recognised that certain conditions present especially difficult target analyte detection problems. Such conditions may include, but are not limited to, complex geological settings, unusual or generally poorly understood behaviour and fate characteristics of certain substances, complex, discontinuous, random, or heterogeneous distributions of existing target analytes, physical impediments to investigation imposed by the location of services, structures and other man-made objects, and the inherent limitations of assessment technologies.
Limitations of Information	The effectiveness of any site investigation may be compromised by limitations or defects in the information used to define the objectives and scope of the investigation, including inability to obtain information concerning historic site uses or prior site assessment activities despite the efforts of the user and assessor to obtain such information.
Chemical Analysis Error	Chemical testing methods have inherent uncertainties and limitations. Senversa routinely seeks to require the laboratory to report any potential or actual problems experienced, or non-routine events which may have occurred during the testing, so that such problems can be considered in evaluating the data.
Level of Assessment	The investigation herein should not be considered to be an exhaustive assessment of environmental conditions on a property. There is a point at which the effort of information obtained and the time required to obtain it outweigh the benefit of the information gained and, in the context of private transactions and contractual responsibilities, may become a material detriment to the orderly conduct of business. If the presence of target analytes is confirmed on a property, the extent of further assessment is a function of the degree of confidence required and the degree of uncertainty acceptable in relation to the objectives of the assessment.
Comparison with Subsequent Inquiry	The justification and adequacy of the investigation findings in light of the findings of a subsequent inquiry should be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made.
Data Useability	Investigation data generally only represent the site conditions at the time the data were generated. Therefore, the usability of data collected as part of this investigation may have a finite lifetime depending on the application and use being made of the data. In all respects, a future reader of this report should evaluate whether previously generated data are appropriate for any subsequent use beyond the original purpose for which they were collected or are otherwise subject to lifetime limits imposed by other laws, regulations or regulatory policies.
Nature of Advice	The investigation works herein are intended to develop and present sound, scientifically valid data concerning actual site conditions. Senversa does not seek or purport to provide legal or business advice.

Figures

Path: Y:\16_GIS\01_Jobs\1.NSW_Jobs\S16913_AIRTRUNK_SIRIUS LANE COVE_DSIM\MXDs\1. Working MXDS\S16913_002_F001_Site Location.mxd

senversa
Address: Level 5, 201 Kent Street, Sydney NSW 2000
Phone: (02) 9994 8016
Website: www.senversa.com.au

Legend

Site Boundary

Notes:
Aerial imagery sourced from Nearmap Pty Ltd

Designed:	R. McKinnon	Date:	11/10/2018
Drawn:	M. Byrne	Revision:	0
Checked:	.	Scale:	1:6,000 (A3)
File:	S16913_002_F001_Site Location		

0 37.5 75 150 225 300 Metres

Datum GDA 1994, Projection MGA Zone 56

Figure No: 1

Title: Site Location

Project: Phase 1 Due Diligence

Location: 1 Sirius Road Lane Cove Lot 1 DP 1151370

Client: AirTrunk Pty Ltd

Path: Y:\16_GIS\01_Jobs\s1.NSW_Jobs\S16913_AIRTRUNK_SIRIUS LANE COVE_DSIMXDs\1. Working MXDS\S16913_002_F002_Site Layout.mxd

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Address: Level 5, 201 Kent Street, Sydney NSW 2000
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Legend

Site Boundary

Notes:
Aerial imagery sourced from Nearmap Pty Ltd

Designed:	R. McKinnon	Date:	11/10/2018
Drawn:	M. Byrne	Revision:	0
Checked:	.	Scale:	1:1,250 (A3)
File:	S16913_002_F002_Site Layout		

0 5 10 20 30 40 Metres

Datum GDA 1994, Projection MGA Zone 56

Figure No: 2

Title: Site Layout

Project: Phase 1 Due Diligence

Location: 1 Sirius Road Lane Cove Lot 1 DP 1151370

Client: AirTrunk Pty Ltd

Appendix A: Desktop Searches

ENVIRO-SCREEN

Property Details

Lot 1 DP1151370

1 Sirius Road, Lane Cove West NSW

Search Date: 27 September 2018

Understanding your Report

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

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 500 m 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, LI Resources cannot guarantee the accuracy or completeness of the information or data provided.

The report provided by LI Resources includes data listed on page 3 (table of contents). All sources of data and definitions are provided on the report maps and as listed in the Product Guide (Attached). For a full list of references, metadata, publications or additional information not provided in this report, please contact LI Resources at info@liresources.com.au.

The report does not include historical or aerial photographs; title searches; dangerous good searches or; Section 10.7 (2) & (5) 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.

This Report, and your use of it, is regulated by LI Resources Terms and Conditions (See LIR Product Guide).

Land Insight and Resources

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INDEX

Section 1 Environmental Records Summary – Property Setting

1.1 SITE LOCATION MAP AND SENSITIVE RECEPTOR

Map 1 (500m Buffer)

Sensitive receptor	Category	Distance (m)*	Direction
First Learning Australia	Child Care Centre	131.35	south-east
Magdala Park	Sports Field	233.78	north
Cherry Bridge Station	Child Care Centre	235.93	south-east
Boobajool Reserve	Park	305.08	north-west
Alder Ave Playground	Park	451.29	east
Gwandalan Reserve	Park	463.65	north-west
Playground	Picnic Area	495.77	south

*Distance from the sensitive receptor point feature to the site boundary centroid.

1.2 LEP ZONING

Map 2 (onsite)

LEP Zoning	IN2 - Light Industrial
Topography	2-34mAHD

1.3 SOIL LANDSCAPE

Map 3a (onsite)

Soil Landscape	ALlc	LANE COVE	**Soil Group**	ALLUVIAL
Description	**Landscape -** level to gently undulating alluvial floodplain draining both the Wianamatta Group shales and Hawkesbury Sandstone. Local relief <5 m, slopes <5%. Partially cleared tall open-forest with disturbed grass understorey. **Soils -** deep (>200 cm) Alluvial Loams (Um6.23, Um1.43) and various buried alluvial and marine soils. **Limitations -** flooding, high soil erosion hazard, seasonal waterlogging.			
Soil Landscape	ERgy	GYMEA	**Soil Group**	EROSIONAL
Description	**Landscape -** undulating to rolling rises and low hills on Hawkesbury Sandstone. Local relief 20-80m, slopes 10-25%. Rock outcrop <25%. Broad convex crests, moderately inclined sideslopes with wide benches, localised rock outcrop on low broken scarps. Extensively cleared open-forest (dry sclerophyll forest) and eucalypt woodland. **Soils -** shallow to moderately deep (30-100 cm) Yellow Earths (Gn2.24) and Earthy Sands (Uc5.11, Uc5.23) on crests and inside of benches; shallow (<20 cm) Siliceous Sands (Uc1.21) on leading edges of benches; localised Gleyed Podzolic Soils (Dg4.21) and Yellow Podzolic Soils (Dy4.11, Dy5.11, Dy5.41) on shale lenses; shallow to moderately deep (<100 cm) Siliceous Sands (Uc1.21) and Leached Sands (Uc2.21) along drainage lines. **Limitations -** localised steep slopes, high soil erosion hazard, rock outcrop, shallow highly permeable soil, very low soil fertility.			

1.4 ACID SULFATE SOIL (OEH 2011)

Map 3a (onsite)

Acid Sulfate Soil Risk Maps (ASS) *(Table 1.5.1)*	On the Property?	Within Record Search Buffer?
Not identified	Class 2 / Class 5	Class 2 / Class 3 / Class 5

1.5 ATLAS OF AUSTRALIAN ACID SULFATE SOIL AND SALINITY

Map 3b (onsite)

ASRIS Atlas of Australian Sulfate Soils *(Table 1.5.2)*	Bx(p-)	Disturbed ASS	**Probability of Occurrence**	Low Probability of occurrence
	Cq(p4)	ASS in inland lakes, waterways, wetlands and riparian zones		Extremely low probability of occurrence
Salinity Hazard / Hydrogeological landscape	A – High Soils having high infiltration rates, even when thoroughly wetted and consisting chiefly of deep, well to excessively-drained sands or gravels. These soils have a high rate of water transmission. B – moderate Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission. * Hydrologic Soil Group of NSW 2017			

Table 1.5.1. Classification scheme in the ASS Planning Maps

Class of Land as shown on ASS Planning Maps	
1	Any works
2	Works below natural ground surface Works by which the watertable is likely to be lowered
3	Works beyond 1m below natural ground surface Works by which the watertable is likely to be lowered beyond 1m below natural ground surface
4	Works beyond 2m below natural ground surface Works by which the watertable is likely to be lowered beyond 2m below natural ground surface
5	Works within 500m of adjacent Class 1, 2, 3, or 4 land which are likely to lower the watertable below 1m AHD on adjacent Class 1, 2, 3 or 4 land.

For each class of land, the maps identify the type of works likely to present an environmental risk if undertaken in the particular class of land. If these types of works are proposed, further investigation is required to determine if ASS are actually present and whether they are present in such concentrations as to pose a risk to the environment.

Table 1.5.2. Australian Atlas of Acid Sulfate Soils[1] (ASS) map (CSIRO/NatCASS)

Code	Distinguishing soil/sediment properties, vegetation, landforms, or other characteristics
	Probability of Occurrence of ASS[1]
A	**High Probability of occurrence -** (>70% chance of occurrence in mapping unit)
B	**Low Probability of occurrence** - (6-70% chance of occurrence in mapping unit)
C	**Extremely low probability of occurrence** - (1-5% chance of occurrence in mapping unit)
D	**No probability of occurrence** - (<1% chance of occurrence in mapping unit)
x	**Disturbed ASS[1] terrain -** (ASS[1] material present below urban development).
u	**Unclassified** - (Insufficient information to classify map unit)
	Zones
a	Potential acid sulfate soil material and/or Monosulfidic Black Ooze (MBO).
b, c	Potential acid sulfate soil generally within upper 1 m.
c, d, e	ASS[1] generally within upper 1 m.
f	ASS[1] generally below 1 m from the surface
g	ASS[1], generally below 3 m from the surface.
h	ASS[1] generally within 1 m of the surface.
i, j	ASS[1] generally below 1 m of the surface.
k	ASS[1] material and/or Monosulfidic Black Ooze (MBO).
l, m, n, o, p, q	ASS[1] generally within upper 1 m in wet / riparian areas.

Subscripts to codes	
(a)	Actual acid sulfate soil (AASS) = sulfuric material.
(p)	Potential acid sulfate soil (PASS) = sulfidic material.
(q)	Monosulfidic Black Ooze (MBO) is organic ooze enriched by iron monosulfides.
Confidence levels	
(1)	All necessary analytical and morphological data are available
(2)	Analytical data are incomplete but are sufficient to classify the soil with a reasonable degree of confidence
(3)	No necessary analytical data are available, but confidence is fair, based on a knowledge of similar soils in similar environments
(4)	No necessary analytical data are available, and classifier has little knowledge or experience with ASS, hence classification is provisional

[1]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 (Pons 1973). Acid sulfate soil (ASS) may include PASS or AASS + PASS. Potential acid sulfate soil (PASS) = sulfidic material. Actual acid sulfate soil (AASS) = sulfuric material.

1.6 GEOLOGY

Map 4 (onsite)

Map Sheet	Symbol	Formation	Group	Era	Period
Sydney 1:100,000 Geological Map	Rh	-	-	Mesozoic	Triassic
Description	Medium to coarse grained quartz sandstone, very minor shale and laminite lenses				

1.7 COAL SEAM GAS (CSG), PETROLEUM WELLS AND OTHER BOREHOLES

Map 5 (1000m Buffer)

	On the Property?	Within Record Search Buffer?
CSG	Not identified	Not identified
Coal	Not identified	Yes, see 1.8.3
Petroleum	Not identified	Not identified
Other	Not identified	Yes, see 1.8.3

1.8 HYDROGEOLOGY

Map 5 (1000m Buffer)

	On the Property?	Within Record Search Buffer?
Aquifer Type	Porous, extensive aquifers of low to moderate productivity	Porous, extensive aquifers of low to moderate productivity
Wetlands	Not identified	Estuarine Wetland - Lane Cove River
Groundwater Bores	Not identified	Yes, see 1.8.1 and 1.8.2

Table 1.8.1. Groundwater Bore Details

Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL[1] (m)	Salinity[1]	Yield[1] (L/s)	Distance (m)	Direction
GW113331	Monitoring	15-01-09	-	-	-	-	-	1025.29	south-east
GW113330	Monitoring	15-01-09	-	-	-	-	-	1031.58	south-east
GW113324	Monitoring	14-01-09	-	-	-	-	-	1033.52	south-east
GW113329	Monitoring	15-01-09	-	-	-	-	-	1034.41	south-east
GW113323	Monitoring	14-01-09	-	-	-	-	-	1035.66	south-east
GW113325	Monitoring	04-12-13	-	-	-	-	-	1038.13	south-east
GW113328	Monitoring	15-01-09	-	-	-	-	-	1048.59	south-east
GW113327	Monitoring	15-01-09	-	-	-	-	-	1048.64	south-east
GW114974	-	-	-	-	-	-	-	1132.30	south-east
GW114975	-	-	-	-	-	-	-	1152.18	south-east
GW114976	-	-	-	-	-	-	-	1159.89	south-east
GW114973	-	-	-	-	-	-	-	1162.49	south-east
GW112648	Monitoring	01-05-12	11.50	11.30	10.59	-	-	1305.16	north-west
GW112647	Monitoring	01-05-12	13.00	13.00	5.65	-	-	1336.02	north-west
GW112646	Monitoring	30-04-12	10.00	10.00	3.65	-	-	1360.84	north-west
GW202406	Monitoring	27-08-10	6.00	6.00	2.1	-	40	1372.25	south-east
GW033631	Recreational	01-12-66	14.00	14	8.5	-	-	1567.23	north-east
GW103133	Recreational	25-09-90	46.00	46	12.5	Fresh	4.5	1573.15	north-east
GW109365	Monitoring	25-09-08	20.15	20.15	-	-	-	1585.73	north-west
GW111742	Monitoring	26-03-12	11.00	11.00	6.1	-	-	1646.77	north-west
GW110124	Monitoring	08-02-00	47.48	47.48	-	-	-	1753.93	north-east
GW110125	Monitoring	31-03-00	29.65	29.65	-	-	-	1800.88	north-east
GW102744	Industrial	03-11-94	39.00	39	2.6	n/a	1.9	1911.32	north-east

Groundwater Bore ID	Authorised Purpose	Completion Date	Drilled Depth (m)	Final Depth (m)	SWL[1] (m)	Salinity[1]	Yield[1] (L/s)	Distance (m)	Direction
GW110126	Monitoring	10-03-00	53.39	53.39	n/a	-	-	1913.23	north-east
GW108901	Recreational	06-06-08	182.50	182.5	38	2600 mg/L	0.75	1959.55	south

[1]The most recent data available from NSW Department of Industry – Lands & Water Division.

Table 1.8.2. Groundwater Bore Driller Lithology Details

Groundwater Bore ID	From Depth (m)	To Depth (m)	Lithology	Description	Distance (m)	Direction
GW112648	0	0.07	FILL	Asphalt	1305.16	north-west
	0.07	0.1	FILL	Roadbase	1305.16	north-west
	0.1	0.3	FILL	Fill	1305.16	north-west
	0.3	0.45	FILL	Filling Brown	1305.16	north-west
	0.45	0.55	CLAY	Clay Soft To Firm	1305.16	north-west
	0.55	0.7	SHLE	Shale L/Strength	1305.16	north-west
	0.7	0.9	SDSN	Sandstone	1305.16	north-west
	0.9	1.79	SDSN	Sandstone M/Strength	1305.16	north-west
	1.79	2.06	SLSN	Siltstone	1305.16	north-west
	2.06	2.27	SLSN	Siltstone M/Strength	1305.16	north-west
	2.27	3.06	SDSN	Sandstone	1305.16	north-west
	3.06	10.35	SDSN	Sandstone, H/Strength	1305.16	north-west
	10.35	10.98	SDSN	Sandstone Weathered,Fractured	1305.16	north-west
	10.98	11.5	SDSN	Sandstone H/Strength,Weathered To Fresh	1305.16	north-west
GW112647	0	0.05	FILL	Asphalt	1336.02	north-west
	0.05	0.15	FILL	Roadbase	1336.02	north-west
	0.15	0.3	FILL	Fill	1336.02	north-west
	0.3	1.3	SHLE	Shale	1336.02	north-west
	1.3	1.85	SHLE	Shale Low Strength	1336.02	north-west
	1.85	3.18	SHLE	Shale	1336.02	north-west
	3.18	4.4	SLSN	Siltstone	1336.02	north-west
	4.4	5.3	SDSN	Sandstone	1336.02	north-west
	5.3	5.8	SHLE	Shale	1336.02	north-west
	5.8	6.06	SHLE	Shale Weathered	1336.02	north-west
	6.06	6.86	SDSN	Sandstone	1336.02	north-west
	6.86	7	SHLE	Shale	1336.02	north-west
	7	8	SDSN	Sandstone	1336.02	north-west
	8	13	SDSN	Sandstone L/Strength	1336.02	north-west
GW112646	0	0.05	FILL	Asphalt	1360.84	north-west
	0.05	0.1	FILL	Road Base	1360.84	north-west
	0.1	0.4	FILL	Filling Brown	1360.84	north-west
	0.4	1.26	SHLE	Shale Low Strength	1360.84	north-west
	1.26	2	SLSN	Siltstone	1360.84	north-west
	2	3.95	SDSN	Sandstone	1360.84	north-west
	3.95	7.05	SDSN	Sandstone Low To Med. Strength	1360.84	north-west
	7.05	10	SDSN	Sandstone	1360.84	north-west
GW202406	0	0.2	FILL	Fill; Concrete	1372.25	south-east

	0.2	0.65	FILL	Fill; Silty Sandy Clay, Low Plasticity, Dark Brown, Fine To Medium Grained Sand, With Igneous Gravel	1372.25	south-east
	0.65	2.5	SDSN	Sandstone; Fine To Coarse Grained, Orange & Yellow	1372.25	south-east
	2.5	4	SDSN	Sandstone; As Above, But Light Grey, Brown & Orange	1372.25	south-east
	4	6	SDSN	Sandstone; As Above, But Orange & Grey	1372.25	south-east
GW033631	0	1.21	TPSL	Topsoil	1567.23	north-east
	1.21	2.68	SDSN	Sandstone Red Soft	1567.23	north-east
	2.68	2.74	SAND	Sand Water Supply	1567.23	north-east
	2.74	4.87	SDSN	Sandstone Red	1567.23	north-east
	4.87	6.7	SDSN	Sandstone Yellow	1567.23	north-east
	6.7	8.83	SDSN	Sandstone White	1567.23	north-east
	8.83	11.27	SDSN	Sandstone Water Supply	1567.23	north-east
	11.27	14.02	SDSN	Sandstone White Water Supply	1567.23	north-east
GW103133	0	1.2	SOIL	Sandy Soil	1573.15	north-east
	1.2	5.4	IGVL	Ironstone With Bands Of Clay	1573.15	north-east
	5.4	8.9	SDSN	Yellow Sandstone	1573.15	north-east
	8.9	20.1	SDSN	Grey Sandstone	1573.15	north-east
	20.1	20.3	SDSN	Grey Sandstone W.B.	1573.15	north-east
	20.3	41.9	SDSN	Sandstone Grey	1573.15	north-east
	41.9	43	SDSN	Sandstone Grey W.B.	1573.15	north-east
	43	46	SDSN	Sandstone Grey	1573.15	north-east
GW109365	0	6.1	SSDS	Silty Sand,Med To Coarse Grained	1585.73	north-west
	6.1	6.6	SDSN	Sandstone,Med Grey,Pale Grey	1585.73	north-west
	6.6	9.6	SDSN	Sandstone,Med To Coarse Grained,Carbonaceous Incl.	1585.73	north-west
	9.6	10.7	SDSN	Sandstone Med Grained	1585.73	north-west
	10.7	11.2	SDSN	Sandstone,Pale Grey	1585.73	north-west
	11.2	12.3	SDSN	Sandstone,Med Grained,Pale Grey	1585.73	north-west
	12.3	14.3	SDSN	Sandstone,Trace Of Carbonacous Inclusion	1585.73	north-west
	14.3	14.7	SDSN	Sandstone,Pale Grey	1585.73	north-west
	14.7	17.4	SDSN	Sandstone,Med To Coarse Grained,Pale Grey	1585.73	north-west
	17.4	20.15	SDSN	Sandstone,Med Grained,,Siltstone Lamination.	1585.73	north-west
GW111742	0	0.03	FILL	Asphalt / Concrete	1646.77	north-west
	0.03	0.1	FILL	Fillig Grey,Some Clay	1646.77	north-west
	0.1	0.5	CLAY	Clay Shaley Brown And Grey,Soft To Firm	1646.77	north-west
	0.5	2.7	SHLE	Shale/Siltstone,Grey And Brown	1646.77	north-west
	2.7	3.92	SLSN	Siltstone ,Light Grey And Red Brown	1646.77	north-west
	3.92	11	SDSN	Sandstone,Light Grey,Fine To Medium Grained	1646.77	north-west
GW110124	0	0.7	UNKN	Continued From Non-Cored Borehole	1753.93	north-east
	0.7	3	SDSN	Sandstone,Medium Grained,Pale Brown Grey	1753.93	north-east
	3	6	SDSN	Sandstone,Red Brown	1753.93	north-east
	6	6.3	NORT	No Core: 0.30m	1753.93	north-east
	6.3	7	SLSN	Siltstone,Dark Grey To Grey,Sandstone	1753.93	north-east
	7	8.6	SDSN	Sandstone Fine Grained	1753.93	north-east

	8.6	18.7	SDSN	Sandstone,Medium Grained,Pale Grey	1753.93	north-east
	18.7	25.1	SDSN	Sandstone Medium Grained,Red Brown Mottled	1753.93	north-east
	25.1	26.7	SDSN	Sandstone,Some Coarse Grain,Pale Grey	1753.93	north-east
	26.7	27.3	SDSN	Sandstone Fine Grained,Some Siltstone	1753.93	north-east
	27.3	30.6	SDSN	Sandstone Medium Grained,Pale Grey	1753.93	north-east
	30.6	31	SDSN	Sandstone Medium To Coarse Grained	1753.93	north-east
	31	32.3	SDSN	Sandstone Medium Grained	1753.93	north-east
	32.3	32.7	SLSN	Siltstone Dark Grey	1753.93	north-east
	32.7	33.9	SDSN	Sandstone Medium Grey	1753.93	north-east
	33.9	35.3	SDSN	Sandstone Coarse Grained	1753.93	north-east
	35.3	46.1	SDSN	Sandstone Medium Grained,Pale Grey	1753.93	north-east
	46.1	47.48	SDSN	Sandstone Fine Grained,Pale Grey	1753.93	north-east
GW110125	0	0.1	SSDS	Silty Sand	1800.88	north-east
	0.1	1.3	SSDS	Silty Sand Fine To Mediium Grained	1800.88	north-east
	1.3	4.5	SSDS	Silty Sand,Mottled Brown	1800.88	north-east
	4.5	8.8	SAND	Sand, Fine To Coarse Grained,Dark Grey	1800.88	north-east
	8.8	10.5	SLVT	Sylty Sand,Fine To Coarse,With Some Charcoal Fragments	1800.88	north-east
	10.5	15.5	SAND	Sand, Fine To Medium Grained,Trace Of Some Silt	1800.88	north-east
	15.5	17.2	SDLC	Sand Fine To Coarse Grained,Bands Of Silty Sand	1800.88	north-east
	17.2	17.6	SDSN	Sandstone Medium Grained,Mottled Light Grey	1800.88	north-east
	17.6	19.2	SDSN	Sandstone Medium Grained	1800.88	north-east
	19.2	19.5	SDSN	Sandstone Fine To Medium Grained	1800.88	north-east
	19.5	21.7	SDSN	Sandstone Medium Grained	1800.88	north-east
	21.7	22	NORT	No Core:0.28m	1800.88	north-east
	22	25.1	SDSN	Sandstone Medium Grained And Some Coarse Grained	1800.88	north-east
	25.1	27.1	SDSN	Sandstone Coarse Grained,Terace Of Some Gravel	1800.88	north-east
	27.1	29	SDSN	Sandstone Medium Grained,Fine Pebbles	1800.88	north-east
	29	29.65	SDSN	Sandstone Fine To Medium Grained	1800.88	north-east
GW102744	0	1	CLAY	Clay Fill	1911.32	north-east
	1	11	SDSN	Sandstone Brown	1911.32	north-east
	11	18	SDSN	Sandstone White	1911.32	north-east
	18	21	SDSN	Sandstone White With Shale	1911.32	north-east
	21	29	SDSN	Sandstone White With Shale	1911.32	north-east
	29	31	CLAY	Clay Stiff Grey Sandy	1911.32	north-east
	31	39	SDSN	Sandstone Grey With Clay	1911.32	north-east
GW110126	0	0.1	FILL	Fill	1913.23	north-east
	0.1	0.5	FILL	Fill,Silty Sand	1913.23	north-east
	0.5	2.5	SSDS	Silty Sand Medium Grained,Dark Brown	1913.23	north-east
	2.5	7	SAND	Sand, Trace Of Shell Fragments	1913.23	north-east
	7	13	PEAT	Peaty Sand,Medium To Coarse Grained	1913.23	north-east
	13	17	SSDS	Silty Sand/Peaty Sand	1913.23	north-east
	17	18	SDCY	Sandy Clay/Clayey Sand,Pale Grey	1913.23	north-east
	18	18.3	BSLT	Borehole Continued As Cored Hole.	1913.23	north-east

	18.3	19.5	SDSN	Sandstone,Fine To Medium Grained	1913.23	north-east
	19.5	23.5	SDSN	Sandstone,Trace Carbonaceous Flecks	1913.23	north-east
	23.5	25.9	SDSN	Sandstone Medium Grained,Pale Grey	1913.23	north-east
	25.9	26	NORT	No Core:160 Mm	1913.23	north-east
	26	27.5	SDSN	Sandstone, Medium To Coarse Grained	1913.23	north-east
	27.5	31.5	SDSN	Sandstone,Fine To Medium Grained	1913.23	north-east
	31.5	34.6	SDSN	Sandstone,Medium Grain,Grey	1913.23	north-east
	34.6	36.3	SDSN	Sandstonemmedium Grey,Pale Grey	1913.23	north-east
	36.3	41.2	SDSN	Sandstone,Medium Grained,Pale Grey	1913.23	north-east
	41.2	46.7	SDSN	Sandstone,Medium Grained,Trace Carbonaceous Laminations	1913.23	north-east
	46.7	53.39	SDSN	Sandstone, Medium Grained,Pale Grey,Massive,Trace Carbonaceous Flecks.	1913.23	north-east
GW108901	0	1	FILL	Fill,Sand And Rocks	1959.55	south
	1	9.8	SDSN	Sandstone L/Brown	1959.55	south
	9.8	9.9	SDSN	Sandstone Fractured	1959.55	south
	9.9	30.3	SDSN	Sandstone Grey	1959.55	south
	30.3	30.4	SDSN	Sandstone Fractured	1959.55	south
	30.4	41	SDSN	Sandstone Grey	1959.55	south
	41	43	SDSN	Sandstone Shale Bedding	1959.55	south
	43	111	SDSN	Sandstone Grey	1959.55	south
	111	114	SDSN	Sandstone Shale Bedding	1959.55	south
	114	133	SDSN	Sandstone Grey	1959.55	south
	133	133.5	SDSN	Sandstone Fine Quartz	1959.55	south
	133.5	169	SDSN	Sandstone Grey	1959.55	south
	169	174.5	SDSN	Sandstone Shale Bedding	1959.55	south
	174.5	178	SDSN	Sandstone Fine Quartz	1959.55	south
	178	179.5	SDSN	Sandstone, Quartz Very Soft	1959.55	south
	179.5	182.5	SDSN	Sandstone Grey	1959.55	south

Table 1.8.3. Other known borehole investigations

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
R286_BH113	Borehole	NWRL_R286_LaneCoveTunnel_GeotechInvestigation	RTA	05-02-01	66.92	170.91	north-east
R286_BH109	Borehole	NWRL_R286_LaneCoveTunnel_GeotechInvestigation	RTA	20-12-01	50.2	189.07	east
GA3	Borehole	NWRL_R286_M2GoreHillFwyTunnel	RTA	27-10-99	6.05	285.13	north-east
GA2	Borehole	NWRL_R286_M2GoreHillFwyTunnel	RTA	25-10-99	30	287.07	north-east
R286_BH124	Borehole	NWRL_R286_LaneCoveTunnel_GeotechInvestigation	RTA	05-09-01	57.25	341.69	north
R286_BH102	Borehole	NWRL_R286_LaneCoveTunnel_GeotechInvestigation	RTA	18-12-00	52.4	400.53	north-east
GA6	Borehole	NWRL_R286_M2GoreHillFwyTunnel	RTA	12-11-99	37.7	459.03	north-east
R286_BH122	Borehole	NWRL_R286_LaneCoveTunnel_GeotechInvestigation	RTA	07-08-01	53.62	464.11	north-east
GA1	Borehole	NWRL_R286_M2GoreHillFwyTunnel	RTA	28-10-99	15.13	473.15	north
R28+A3:H346_BH125	Borehole	NWRL_R286_LaneCoveTunnel_GeotechInvestigation	RTA	25-08-01	42	590.98	east
R286_BH101	Borehole	NWRL_R286_LaneCoveTunnel_Geotec	RTA	14-12-00	22.8	593.84	north

Borehole ID	Purpose	Project	Client/ License	Date Drilled	Depth (m)	Distance (m)	Direction
		hInvestigation					
GA7	Borehole	NWRL_R286_M2GoreHillFwyTunnel	RTA	12-11-99	44.68	672.22	east
R286_BH103	Borehole	NWRL_R286_LaneCoveTunnel_Geotechnical Investigation	RTA	08-01-01	70.23	736.44	east
R286_BH104	Borehole	NWRL_R286_LaneCoveTunnel_Geotechnical Investigation	RTA	18-12-00	23	836.42	east
R286_BH105	Borehole	NWRL_R286_LaneCoveTunnel_Geotechnical Investigation	RTA	11-01-01	49.76	1143.02	east
021BH2	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	19-05-10	5.9	1365.79	south-east
021BH1	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	19-05-10	5.8	1393.54	south-east
MIN_44031	Borehole	DPI Minerals Borehole Register - Sydney Water,	Sydney Water,	Unknown	131.8	1435.22	south
44031	Coal borehole	DPI Minerals Borehole Register - Sydney Water,	Sydney Water,	<Null>	131.8	1435.68	south-east
013NS20	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	11-06-98	131.8	1435.74	south
GA4	Borehole	NWRL_R286_M2GoreHillFwyTunnel	RTA	27-10-99	53.15	1502.51	east
44030	Coal borehole	DPI Minerals Borehole Register - Sydney Water,	Sydney Water,	<Null>	130	1576.8	south-east
MIN_44030	Borehole	DPI Minerals Borehole Register - Sydney Water,	Sydney Water,	Unknown	130	1576.87	south-east
008BH07	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	18-01-93	1.9	1600.60	south-east
008BH01	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	19-01-93	12.1	1614.52	south-east
008BH03	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	20-01-93	8.6	1637.78	south-east
008BH04	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	20-01-93	7.5	1646.51	south-east
008BH05	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	21-01-93	6.9	1661.91	south-east
008BH06	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	21-01-93	5.5	1670.82	south-east
008BH08	Borehole	NSOOS Geotechnical Desktop Study	Sydney Water	21-01-93	3.2	1686.84	south-east
R286_BH106	Borehole	NWRL_R286_LaneCoveTunnel_Geotechnical Investigation	RTA	21-12-00	40.15	1714.04	east
Q-071-BH4	Borehole	NWRL_R219_Sydney_Metro_line_1_Arup_NorthWest Metro	North West Metro Team	31-05-06	26.74	1910.68	south-west
Q-071-BH3	Borehole	NWRL_R219_Sydney_Metro_line_1_Arup_NorthWest Metro	North West Metro Team	<Null>	14.96	1997.87	south-west

1.9 GROUNDWATER EXCLUSION ZONES

Map 5 (1000m Buffer)

	On the Property?	Within Record Search Buffer?
Botany Groundwater Management Zones[1]	Not identified	Not identified

1. 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.

1.10 UNDERGROUND PETROLEUM STORAGE SYSTEM (UPSS) SENSITIVITY

Map 5 (1000m Buffer)

	On the Property?	Within Record Search Buffer?
UPSS Environmentally sensitive zone	Southern NSW area UPSS	Southern NSW area UPSS

Section 2 Environmental Records Summary – Contamination and Potentially Contaminating Activities

2.1 PFAS INVESTIGATION PROGRAM

Map 5 (2000m Buffer)

Site	Address	Distance (m)	Direction
Not identified			

2.2 CONTAMINATED LAND RECORD OF NOTICES ISSUED UNDER THE CLM ACT 1997

Map 6 (1000m Buffer)

Site Name[2]	Site ID	Address[1]	Notices	Distance (m)	Direction
Pacific Power	3039	Lot 1, DP 546860 Sirius ROAD LANE COVE	1 current and 8 former	0.00	onsite

1. Some addresses do not contain specific street numbers. Records identified as being in the surrounding area have been added for information.
2. Former NSW EPA sites. These sites have been removed from the Record of Notices and/or the Sites Notified lists and are kept here for information purposes only.

2.3 SITES NOTIFIED AS CONTAMINATED TO THE NSW EPA

Map 6 (1000m Buffer)

Site Name[2]	Address[1]	Activity that caused Contamination	EPA Site Management Class[3]	Distance (m)	Direction
Pacific Power	Sirius ROAD LANE COVE	Landfill	Contamination formerly regulated under the CLM Act	0.00	onsite
Ventemans Reach Bushland	Off Mars ROAD LANE COVE WEST	Unclassified	Under assessment	0.00	onsite

1. Some addresses do not contain specific street numbers. Records identified as being in the surrounding area have been added for information.
2. Former NSW EPA sites. These sites have been removed from the Record of Notices and/or the Sites Notified lists and are kept here for information purposes only.
3. The EPA maintains a record of sites that have been notified to the EPA by owners or occupiers as contaminated land. The sites notified to the EPA and recorded on the register are at various stages of the assessment and/or remediation process. Table 5 outlines the possible management status that can be attributed to a registered contaminated site.

Table 2.3.1. EPA Site Management Class Explanation

EPA Site Management Class	
Under Assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Contamination currently regulated under the CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record.
Contamination currently regulated under the POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.

EPA Site Management Class	
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record.

2.4 OTHER EPA CONTAMINATION ISSUES

Map 6 (1000m Buffer)

Former Gasworks Sites

Site	Location	Distance (m)	Direction
Not identified			

James Hardie Asbestos Waste Contamination Legacy

Site	Location	Type	Distance (m)	Direction
Not identified				

Former Uranium Processing Site at Hunters Hill (NSW)

Site	Location	Distance (m)	Direction
Not identified			

2.5 AVIATION FUEL DEPOTS/TERMINALS

Map 7 (500m Buffer)

Site name	Description	Status	Distance (m)	Direction
Not identified				

2.6 AVIATION RESCUE FIRE FIGHTING FACILITIES (ARFF)

Map 7 (500m Buffer)

Site name	Class	Status	Distance (m)	Direction
Not identified				

2.7 DERELICT MINES AND QUARRIES

Map 7 (500m Buffer)

Deposit Name	Method	Description	Status	Distance (m)	Direction
Not identified					

2.8 DRY CLEANERS

Map 7 (500m Buffer)

Site name	Location	Status	Distance (m)	Direction
Not identified				

2.9 LIQUID FUEL DEPOTS/TERMINALS

Map 7 (500m Buffer)

Site name	Owner	Location	Status	Distance (m)	Direction
Not identified					

2.10 MILITARY FACILITIES

Map 6 (1000m Buffer)

Site name	Defence code	Area (ha)	Distance (m)	Direction
Not identified				

2.11 POWER STATIONS

Map 7 (500m Buffer)

Site name	Owner	Primary Fuel Type	Status	Distance (m)	Direction
Not identified					

2.12 SERVICE STATIONS

Map 7 (500m Buffer)

Site name	Owner	Location	Status	Distance (m)	Direction
Not identified					

2.13 SUBSTATIONS/ SWITCHING STATIONS

Map 7 (500m Buffer)

Site name	Owner	Location	Status	Distance (m)	Direction
Ausgrid Lane Cove	Ausgrid	29 Sirius Rd Lane Cove West, New South Wales	Operational	312	south

2.14 TELEPHONE EXCHANGES

Map 7 (500m Buffer)

Site name	Location	Status	Distance (m)	Direction
Not identified				

2.15 WASTE MANAGEMENT FACILITIES

Map 7 (500m Buffer)

Site name	Owner	Class	Status	Distance (m)	Direction
Not identified					

2.16 WASTEWATER TREATMENT FACILITIES

Map 7 (500m Buffer)

Site name	Operator	Class	Status	Distance (m)	Direction
Not identified					

2.17 UNEXPLODED ORDNANCE (UXO) SITES DEPARTMENT OF DEFENCE (DoD)

Map 7 (500m Buffer)

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

2.18 OTHER POTENTIALLY CONTAMINATED SITES

Map 7 (500m Buffer)

Other Potentially Contaminated Sites

Site name	Category	Location	Distance (m)	Direction
Symbio Laboratories Sydney	Laboratory	2 Sirius Rd, Lane Cove West NSW 2066	43.90	east
Signature Orthopaedics	Manufacturer	7 Sirius Rd, Lane Cove West NSW 2066	45.30	east
Plastic Tooling Manufacturing Pty Ltd	Molding supplier Manufacturer	9 Sirius Rd, Lane Cove NSW 2066	63.16	east
Alto Hyundai Service Centre	Car Repair and Maintenance	4 Sirius Rd, Lane Cove West NSW 2066	102.84	east

Site name	Category	Location	Distance (m)	Direction
Definitive Car Detailing	Car Wash	12/85 Mars Rd, Lane Cove West NSW 2066	114.53	south-east
Road Runner Mobile Tyres	Repair Facility	14/83-85 Mars Rd, Sydney NSW 1595	117.77	south-east
HMA POGC Sensor Technology	Industrial Equipment Supplier	13 Sirius Rd, Lane Cove West NSW 2066	127.94	east
Kanes Hire PTY LTD	equipment Rental Agency	19 Sirius Rd, Lane Cove West NSW 2066	149.82	south-east
Combined Towing Services NSW	Towing Service	77 Mars Rd, Lane Cove West NSW 2066	155.45	south-east
Dashing Group	Commercial Printer	27 Sirius Rd, Lane Cove NSW 2066	221.91	south-east
Concise Bodyworks	Repair Facility	8 Chaplin Dr, Lane Cove West NSW 2066	224.44	east
AgriGen Biotech Pty Ltd	Agricultural Service	1/4-6 Chaplin Dr, Lane Cove NSW 2066	236.41	east
Service Shop	Mechanic	3/19 Chaplin Dr, Lane Cove West NSW 2066	252.85	east
Zorg Industries Pty Ltd.	Auto Parts Store	4-6 Chaplin Dr, Lane Cove West NSW 2066	265.50	south-east
SC Johnson & Son PTY LTD	Manufacturer	160 Epping Rd, Lane Cove NSW 2066	267.81	north-east
Covidien	Manufacturer	166 Epping Rd, Lane Cove West NSW 2066	276.85	north
Sunwild Farm	FMCG Manufacturer	13 6/2 Chaplin Dr, Lane Cove West NSW 2066	299.98	south-east
Eurofins Agroscience Testing	Agroscience Testing	16 Mars Rd, Lane Cove West NSW 2066	302.64	south-east
Beckman Coulter Australia Pty Ltd	Manufacturer	23-27 Chaplin Dr, Lane Cove West NSW 2066	325.20	east
Ingredion ANZ Pty Ltd	Manufacturer	170 Epping Rd, Lane Cove NSW 2066	378.00	north
Ernest Fleming Machinery & Equipment Pty Ltd	Industrial Equipment Supplier	7/27 Mars Rd, Lane Cove NSW 2066	383.90	east
Fuji SMBE Harwal Pty Ltd	Machining Manufacturer	16 Mars Rd, Lane Cove West NSW 2066	387.47	south-east
Steam Australia	Cleaning Products Supplier	208/27 Mars Rd, Lane Cove West NSW 2066	393.26	south-east
St Jude Medical Australia	Medical Technology Manufacturer	17 Orion Rd, Lane Cove NSW 2066	406.44	east
Cap-XX	Manufacturing Facility		406.48	south-east
Ati Australia	Telecommunications Equipment Supplier	5/27 Mars Rd, Lane Cove NSW 2066	414.54	east
Capital S.M.A.R.T Repairs Lane Cove West	Car Repair and Maintenance	4/2 Lincoln St, Lane Cove West NSW 2066	431.62	south-east
Microbiogen Pty Ltd	Biotechnology Company	Unit E2, Lane Cove Business Park,, 32 Sirius Rd, Lane Cove	433.66	south-east

Site name	Category	Location	Distance (m)	Direction
		West NSW 2066		
Car Beauty Salon	Repair Facility	696 Mowbray Rd W, Lane Cove North NSW 2066	467.75	north-east
Fremder Automotive	Repair Facility	698 Mowbray Rd, Lane Cove North NSW 2066	468.83	north-east
Denmor Automotive Services	Repair Facility	694 Mowbray Rd W, Lane Cove North NSW 2066	486.02	north-east

Note: Data is current as of 2018, however due to the turnover of business locations some addresses may be former businesses.

Historical (Legacy) Landfills

Site	Location	Distance (m)	Direction
Blackmans Park	Blackmans Park and Sporting Field, Lloyd Rees Drive, Lane Cove	469	south

Note: This is not an exhaustive list of all legacy landfills in NSW

Parramatta River Catchment Land Use Areas – Zoning Changes

Land Use 1943	Land Use 2005	Distance (m)	Direction
Not identified			

Parramatta River Catchment Land Use Areas – Reclamation Areas

	On the Property?	Within Record Search Buffer?
Reclamation Area	Yes	Yes

*Many areas of Parramatta river have been reclaimed, often being used as rubbish dumps.

2.19 LICENSING UNDER THE POEO ACT 1997

Map 8 (500m Buffer)

Licences

EPL Number	Licence holder	Location Name	Premise Address	Fee Based Activity	Distance (m)	Direction
518	INGREDION ANZ PTY LTD	INGREDION	170 Epping Road Lane Cove	General agricultural processing	342.46	north

Delicensed Premises still Regulated by EPA, Licences Surrendered, Clean Up and Penalty Notices

Licence Number	Licence holder	Name	Premise Address	Fee Based Activity	Status	Distance (m)	Direction
2248	S.C. Johnson & Son Pty Ltd	S.C.Johnson	160 Epping Road Lane Cove	Chemical production waste generation	Surrendered	0.00	north

Licence Number	Licence holder	Name	Premise Address	Fee Based Activity	Status	Distance (m)	Direction
6687	Industrial & Decorative Gold Plating Co Pty Ltd	Industrial & Decorative Gold Plating	79-81 Mars Road Lane Cove	Hazardous, Industrial or Group A Waste Generation or Storage	Delicensed	61	east
6678	Machin & Ewen Pty Ltd	Machin & Ewen Pty Ltd	Cnr Mars & Sirius Roads Lane Cove	Hazardous, Industrial or Group A Waste Generation or Storage	Delicensed	240	south
6595	Cochlear Limited	Cochlear Limited	14 - 16 Mars Road Lane Cove	Hazardous, Industrial or Group A Waste Generation or Storage	Delicensed	351	South-east
12076	John Holland Pty Ltd	Lane Cove Tunnel Project	Epping Road	Road construction	Surrendered	360	North-east
11801	Cap-Xx Pty Ltd	CAP-XX	9-10/12 Mars Road Lane Cove	Hazardous, Industrial or Group A Waste Generation or Storage	Delicensed	395	South-east
1024596	Penford Australia Limited	INGREDION	170 Epping Road Lane Cove	s.91 Clean Up Action - Licensed	Issued	342.46	north
1024892	Penford Australia Limited	INGREDION	170 Epping Road Lane Cove	s.91 Clean Up Action - Licensed	Issued	342.46	north

2.20 NPI INDUSTRIAL FACILITIES

Map 8 (500m Buffer)

Facility name	Address	Primary ANZSIC Class	Reporting Year	Distance (m)	Direction
S.C. Johnson and Son Pty Ltd	160 Epping Road Lane Cove	Basic Inorganic Chemical Manufacturing	2010/2011	0.00	north
Ingredion ANZ Pty Ltd	170 Epping Road Lane Cove	Grain Mill Product Manufacturing	2016/2017	342.46	north

2.21 PUBLIC REGISTER OF PROPERTIES AFFECTED BY LOOSE-FILL ASBESTOS INSULATION

Map 8 (onsite)

Address	Match Found
Not identified	

HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA

1932 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Not identified					

* If no distance is provided, address no longer exists.

1940 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Not identified					

* If no distance is provided, address no longer exists.

1950 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Graphite	Grozier Thomas & Son	Mars Road, Lane Cove	Street		
Medical Supplies	Australian Cellucotton Products Pty Ltd	Mars Road, Lane Cove	Street		
Toilet Supplies	Australian Cellucotton Products Pty Ltd	Mars Road, Lane Cove	Street		
Poultry Farmers & Dealers	Robinson H A	Mars Road, Lane Cove	Street		

* If no distance is provided, address no longer exists.

1965 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Currently being Compiled					

* If no distance is provided, address no longer exists.

1970 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
AGRICULTURAL CHEMICAL MFRS. &/OR DISTS.	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
CLEANSER & CLEANING PREPARATION MFRS. &/OR DISTS.	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
DISINFECTANT MFRS. &/OR DISTS.	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lone Cove	Address	0m	South
SHEEP DIP & BRANDING OILS—MFRS. &/OR DISTS.	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
SOAP MFRS.—LIQUID	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
STOCK REMEDIES MANUFACTURERS &/OR DISTRIBUTORS	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
VETERINARY SUPPLIES & INSTRUMENTS—MFRS. &/OR DISTRIBUTORS	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
VETERINARY SUPPLIES/INSTRUMENTS —RETAIL	Dennett, W. D. Pty. Ltd.,	91 Mars Rd., Lane Cove	Address	0m	South
AIR CONDITIONING UNITS & MACHINERY MFRS.	Anemostat Co. of Aust.,	2 Sirius Rd., Lane Cove	Address	20m	East
MINING MACHINERY & EQUIPMENT IMPORTERS, DISTRIBUTORS &/OR MANUFACTURERS	Electric Control&Engineering Ltd.,	2 Sirius Rd., Lane Cove	Address	20m	East
RECTIFIER MANUFACTURERS	Electric Control & Engineering Ltd.,	2 Sirius Rd., Lane Cove	Address	20m	East
ELECTRIC MOTORS—DEALERS &/OR WHOLESALERS	Maddrell Bros. Pty. Ltd.,	6 Orion Rd., Lane Cove	Address	20m	East
ELECTRIC SWITCH & CONTROL GEAR —FLAMEPROOF—MANUFACTURERS &/OR DISTRIBUTORS	Maddrell Bros. Pty. Ltd.,	6 Orion Rd., Lane Cove	Address	20m	East
ELECTRIC SWITCH & CONTROL GEAR MFRS. &/OR DISTS.	Maddrell Bros. Pty. Ltd.,	6 Orion Rd., Lane Cove	Address	20m	East
GRAPHITE/GRAPHITE MATERIALS SUPPLIERS	Grozier, T. & Son,	79-85 Mars Rd., Lane Cove	Address	61m	South
GRAPHITES—COLLOIDAL—IMPORTERS/DISTRIBUTORS	Grozier, Thomas & Son,	79-85 Mars Rd., Lane Cove	Address	61m	South

PAINT, LACQUER MANUFACTURERS	Grozler, Thomas & Son,	79-85 Mars Rd., Lane Cove	Address	61m	South
CHALK & CRAYON MFRS. &/OR IMPORTERS	Grozier, Thomas&Son,	79 Mars Rd, Lane Cove	Address	61m	South
ABRASIVE MANUFACTURERS	McGill, G. S„	81 Mars Rd., Lane Cove	Address	61m	South
ELECTROPLATERS	Industrial & Decorative Gold Plating Co. Pty. Ltd.,	81 Mars Rd., Lane Cove	Address	61m	South
ELECTROPLATERS—MFRG.	Industrial&Decorative Gold Plating Co. Pty. Ltd.,	81 Mars Rd., Lane Cove	Address	61m	South
ELECTRIC LIGHT FITTINGS (SHADES, STANDARD BRACKETS, ETC) MFRS. &/OR DISTS.	LEONORA DIVISION OF PHILIPS ELECTRICAL PTY LTD (NEWCASTLE)	67-77 Mars Rd., Lane Cove	Address	102m	South
GLASS MANUFACTURERS	LEONORA DIVISION OF PHILIPS ELECTRICAL PTY LTD (NEWCASTLE)	67-77 Mars Rd., Lane Cove	Address	102m	South
GARBAGE-COLLECTING EQUIP. MFRS./ DISTRIBUTORS	Macdonald incinerator Co.,	17 Sirius Rd., Lane Cove	Address	124m	South
INCINERATOR BUILDERS/MFRS./ W'SALERS	Macdonald Incinerator Co.,	17 Sirius Rd., Lane Cove	Address	124m	South
CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS	Semper-Seal Chemical Pty. Ltd.,	19 Sirius Rd., Lane Cove	Address	128m	South
CORROSION PREVENTION & CONTROL SPECIALISTS	Semper-Seal Chemical Pty. Ltd.,	19 Sirius Rd., Lane Cove	Address	128m	South
RUST SOLVENT MFRS.	Semper-Seal Chemical Pty. Ltd.,	19 Sirius Rd., Lane Cove	Address	128m	South
RUSTPROOFING MATERIALS	Ferropro Distributing Co.	19 Sirius Rd., Lane Cove	Address	128m	South
RUSTPROOFING MATERIALS	Semper Seal Chemical Pty. Ltd.	19 Sirius Rd. Lane Cove	Address	128m	South
RUSTPROOFING SPECIALISTS	Ferropro Distributing Co.	19 Sirius Rd.. Lane Cove	Address	128m	South
RUSTPROOFING SPECIALISTS	Semper-Seal Chemical Pty. Ltd.	19 Sirius Rd., Lane Cove	Address	128m	South
SEPTIC TANK MFRS., INSTALLERS &/OR SPECIALISTS	Ferropro Distributing Co.,	19 Sirius Rd., Lane Cove	Address	128m	South
AEROSOL PACKAGING SPECIALISTS	CONSOLIDATED AEROSOLS LIMITED	25 SIRIUS RD., LANE COVE, N.S.W.	Address	160m	South
INSECTICIDE MFRS.	Consolidated Aerosols Ltd.,	25 Sirius Rd., Lane Cove, 2066	Address	160m	South
SCREW MFRS. &/OR DISTS.	Machin & Ewen Pty. Ltd.,	Sirius Rd., Lane Cove	Street		
BOILERMAKERS	Machin & Ewen Pty. Ltd.,	Mars Rd., Lane Cove	Street		

ENGINEERS—PRECISION	Machin&Ewen Pty. Ltd.,	Mars Rd., Lane Cove	Street		
ENGINEERS—REPETITION	Machin & Ewen Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CARAVAN TOWING SERVICES	De-Luxe Taxi Truck & Carrying Co. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CARRIERS &CARTAGE CONTRACTORS	De-Luxe Taxi Truck & Carrying Co. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CHEMICAL IMPORTERS &/OR DISTRIBUTORS	Diversey (A'sia) Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS	Diversey (A'sia.) Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CLEANSER & CLEANING PREPARATION MFRS. &/OR DISTS.	Diversey (A/asia.) Pty. Ltd.,	Mars Rd., Lane Cove	Street		
DETERGENTS. DISINFECTANTS, CLEANING AIDS MFRS. &/OR DISTRIBUTORS	DIversey (A/asia) Pty. Ltd,	Mars Rd., Lane Cove	Street		
DISINFECTANT MFRS. &/OR DISTS.	Diversey (A'asia) Pty. Ltd.,	Mars Rd., Lane Cove	Street		
INSECTICIDE MFRS.	Diversey (A/asia.) Pty. Ltd.,	Mars Rd., Lane Cove	Street		
PEST CONTROL	Diversey (A/asia.) Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CONFECTIONERS—MANUFACTURING &/OR WHOLESALE	Mastercraft Chocolate Co. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
CUSTOMS AGENTS	De-Luxe Taxi Truck&Carrying Co. Pty. Ltd,	Mars Rd., Lane Cove	Street		
ROAD TRANSPORT SERVICES—INTERSTATE	De-Luxe Taxi Truck & Carrying Co. Pty. Ltd.	Mars Rd., Lane Cove	Street		
TAXI TRUCK OPERATORS	De-Luxe Taxi Truck & Carrying Co. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
ENGINEERS—GENERAL &/OR MFRG. &/OR MECHANICAL	A.S.H. Engineering Pty. Ltd.,	Mars Rd., Lane Cove	Street		
TOOL MAKERS	A.S.H. Engineering Pty. Ltd.,	Mars Rd., Lane Cove	Street		
PACKAGING/PACKING SPEC.	Kimberley-Clark of Aust. Pty. Ltd.,	Mars Rd.. Lane Cove	Street		
PAPER CONVERTERS	Kimberly-Clark of Australia Pty. Ltd.,	Mars Rd., Lane Cove	Street		
PAPER DISPENSER MFRS. &/OR DISTS.	Kimberly-Clark of Aust. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
PAPER—LUNCHEON—MFRS./ DISTRIBUTORS	Kimberly-Clark of Aust. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
PAPER-MAKING MACHINERY MFRS.	Kimberly-Clark of Aust. Pty. Ltd.,	Mars Rd., Lane Cove	Street		

PAPER MERCHANTS	Kimberley-Clark of Aust. Pty. Ltd.,	Mars Rd., Lane Cove	Street		
PAPER SERVIETTES/TOWELS —MFRS./ DISTRIBUTORS	Kimberley-Clark of Aust. Pty. Ltd.,	Mars Rd., Lane Cove, 2066	Street		
PAPER-SLITTING SPECIALISTS	Kimberly-Clark of Aust. Pty. Ltd.	Mars Rd., Lane Cove	Street		
SANITARY TOWEL MFRS./ DISTRIBUTORS	Kimberly-Clark of Australia Pty. Ltd.,	Mars Rd., Lane Cove	Street		
TOILET PAPER MFRS.	Kimberly-Clark of Australia Pty. Ltd.,	Mars Rd., Lane Cove	Street		
TOWEL MFRS. &/OR W'SALERS	Kimberly-Clark of Australia Pty. Ltd.,	Mars Rd., Lane Cove	Street		
WAXED PAPER MFRS.	Kimberly-Clark of Australia Ltd.,	Mars Rd., Lane Cove	Street		
PRINTERS— LITHOGRAPHIC (OFFSET)	Posters Pty. Ltd.,	Mars Rd., Lane Cove	Street		
AGRICULTURAL CHEMICALS—IMPS. &/OR DISTS.	Ciba Co. Pty. Ltd.,	Orion Rd., Lane Cove	Street		
AGRICULTURAL CHEMICAL MFRS. &/OR DISTS.	Ciba Co. Pty. Ltd.,	Orion Rd., Lane Cove	Street		
CHEMICAL MANUFACTURERS &/OR DISTRIBUTORS	Clba Co. Pty. Ltd.,	Orion Rd., Lane Cove	Street		
CHEMISTS— MANUFACTURING &/OR WHOLESALE	Ciba Pty. Ltd.,	Orion Rd., Lane Cove	Street		
DYE & BLEACH MANUFACTURERS, IMPORTS. &/OR DISTS.	Ciba Co. Pty. Ltd.,	Orion Rd., Lane Cove	Street		
FIBREGLASS RAW MATERIALS—RESINS —MFRS. &/OR IMPORTERS	Ciba Company Pty. Ltd.,	Orion Rd., Lane Cove	Street		
PLASTIC FABRICATORS & VACUUM FORMERS	Ciba Co. Pty. Ltd..	Orion Rd., Lane Cove	Street		
TANNERS' SUPPLIERS	Ciba Company Pty. Ltd.,	Orion Rd., Lane Cove	Street		
VETERINARY SUPPLIES & INSTRUMENTS— MFRS. &/OR DISTRIBUTORS	Ciba Co. Pty. Ltd.,	Orion Rd., Lane Cove	Street		
CHEMISTS— MANUFACTURING &/OR WHOLESALE	Sera Pty. Ltd.,	Orion Rd., Lane Cove	Street		
COSMETIC MFRS. &/OR W'SALERS	Sera Pty. Ltd.,	Orion Rd., Lane Cove, 2066	Street		
CIGARETTE LIGHTER MFRS. &/OR IMPORTERS	Ronson Pty. Ltd.,	Orion Rd., Lane Cove	Street		

ELECTRIC SHAVER IMPORTERS, MFRS. &/OR DISTS.	Ronson Pty Ltd.,	Orion Rd., Lane Cove	Street		
ELECTRIC SWITCH & CONTROL GEAR MFRS. &/OR DISTS.	Dengate&McKinstry Pty. Ltd.,	Orion Rd., Lane Cove	Street		
ELECTRICAL SWITCHBOARD MANUFACTURERS	Dengate & McKinstry Pty. Ltd.,	Orion Rd., Lane Cove	Street		
ENGINEERS—ELECTRICAL	Dengate & McKinstry Pty. Ltd.,	Orion Rd., Lane Cove	Street		
ENGINEERS—GENERAL &/OR MFRG. &/OR MECHANICAL	Dengate & McKinstry Pty. Ltd.,	Orion Rd., Lane Cove	Street		

* If no distance is provided, address no longer exists.

1974 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Chemical Mfrs. &/or Druggists-W'sale	Dennett WD Pty Ltd	91 Mars Road, Lane Cove	Address	0m	South
Chemicals - Agricultrual	Dennett WD Pty Ltd	91 Mars Road, Lane Cove	Address	0m	South
Electric Motors & Generators	Reliance Automation Pty Ltd	2 Sirius Road, Lane Cove	Address	20m	East
Electrical Switches & Control Equipment	Reliance Automation Pty Ltd	2 Sirius Road, Lane Cove	Address	20m	East
Electric Motors & Generators	Bull Super Silent Motors (Maddrell Bros Pty Ltd)	6 Orion Road, Lane Cove	Address	20m	East
Electric Motors & Generators	Maddrell Bros Pty Ltd	6 Orion Road, Lane Cove	Address	20m	East
Electric Cable & Wire - Mfrs. &/or W'salers	DEA Power Cables Pty Ltd	6 Orion Road, Lane Cove	Address	20m	East
Electrical Switches & Control Equipment	Govan Flame Proof	6 Orion Road, Lane Cove	Address	20m	East
Electrical Switches & Control Equipment	Maddrell Bros Pty LTd (flame proof electrical equipment, cable glands)	6 Orion Road, Lane Cove	Address	20m	East
Insulating Materials - Acoustical-Mfrs &/or W'salers	K.13 Spray on Insulation	7 Sirius Road, Lane Cove	Address	23m	East
Insulation Contractors - Acoustical &/or Thermal	Associated Insulation Pty Ltd	7 Sirius Road, Lane Cove	Address	23m	East
Insulation Contractors - Acoustical &/or Thermal	South Pacific Insulation pty Ltd	7 Sirius Road, Lane Cove	Address	23m	East
Abrasives	McGill Garth S	81 Mars Road, Lane Cove	Address	61m	South
Electroplating - Household & Miscellaneous	Industrial & Decorative Gold Plating Co Pty Ltd	81 Mars Road, Lane Cove	Address	61m	South
Graphite	Grazier Thomas & Son	79 Mars Road, Lane Cove	Address	61m	South

Electroplating - Industrial	Industrial & decorative Gold Plating Co Pty Ltd (silver, rhodium, bright tin, solder)	81 Mars Road, Lane Cove	Address	61m	South
Printed &/or Etched Circuits	Industrial & Decorative Gold Plating Co Pty Ltd	81 Mars Road, Lane Cove	Address	61m	South
Insecticides & Fungicides	Nufarm Chemicals Pty Ltd	4 Sirius Road, Lane Cove	Address	63m	East
Chemicals - Agricultrual	Nufarm Chemicals Pty Ltd	4 Sirius Road, Lane Cove	Address	63m	East
Chemical Mfrs. &/or Druggists-W'sale	Philips Duphar Pty Ltd	Rear 4 Sirius Road, Lane Cove	Address	63m	East
Chemical Suppliers	Philips-Duphar Pty Ltd (vitamin concentrates, agricultrual chemicals, veterinary medicines, pharmaceuticals)	Rear 4 Sirius Road, Lane Cove	Address	63m	East
Chemical Suppliers	Ciba-Geigy Aust Ltd	14 Orion Road, Lane Cove	Address	116m	East
Dyes & Dyestuffs	Ciba-Geigy Aust Ltd (dyestuffs for all purposes)	Orion Road, Lane Cove	Address	116m	East
Plastics - Raw Materials	Ciba-Geigy Aust Ltd	Orion Road, Lane Cove	Address	116m	East
Colours & Pigments - Mfrs &/or W'salers	Ciba-Geigy Aust Ltd	Orion Road, Lane Cove	Address	116m	East
Motor Engineers & Repairers	Bridger & Bristol Automotives	Rear 19 Sirius Road, Lane Cove	Address	128m	South
Waste Reduction & Disposal Services	MacDonald JD Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Address	124m	South
Carriers Heavy	Gibson DF Pty Ltd	Mars Road, Lane Cove	Street		

* If no distance is provided, address no longer exists.

1980 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Hospital Equipment &/or Supplies	Medtel Pty Ltd	5 Sirius Road, Lane Cove	Street	0m	East
Medical Equipment &/or Repairs	Medtel Pty Ltd	5 Sirius Road, Lane Cove	Street	0m	East
Medical Supplies	Domedica Pty Ltd	5 Sirius Road, Lane Cove	Street	0m	East
Medical Supplies	Medtel Pty Ltd	5 Sirius Road, Lane Cove	Street	0m	East
Surgical Supplies	Domedica Surgical Pty Ltd	1 Apollo Place, Lane Cove	Street	0m	East
Electric Motors & Generators	Roche & Lamb Pty Ltd	2 Orion Road, Lane Cove	Street	20m	East
Electric Motors & Generators - Repairs	Roche & Lamb Pty Ltd	2 Orion Road, Lane Cove	Street	20m	East

Air Compressors &/or Service	Dresser-Clark (Madorell Bros Pty Ltd)	6 Orion Road, Lane Cove	Street	20m	East
Electric Motors & Generators	Maddrell Bros Pty Ltd	6 Orion Road, Lane Cove	Street	20m	East
Electric Motors & Generators	Toshiba A C Motors (Maddrell Bros Pty Ltd)	6 Orion Road, Lane Cove	Street	20m	East
Electrical Switches & Control Equipment	Govan Flame Proof (Maddrell Bros Pty Ltd)	6 Orion Road, Lane Cove	Street	20m	East
Electrical Switches & Control Equipment	Maddrell Bros Pty Ltd	6 Orion Road, Lane Cove	Street	20m	East
Furniture Mfrs. &/or W'salers	Humphreys Collins Homewares Pty Ltd	6 Orion Road, Lane Cove	Street	20m	East
Furniture Mfrs. &/or W'salers	Personality Furniture	6 Orion Road, Lane Cove	Street	20m	East
Ceilings	Associated Insulation (NSW) Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Insulation Contractors - thermal &/or Acoustic	Associated Industrial Insulation Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Insulation Contractors - thermal &/or Acoustic	Associated Insulation (NSW) Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Insulation Contractors - thermal &/or Acoustic	South Pacific Insulation Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Insulation Materials - Acoustic -W'salers &/or Mfrs	South Pacific Insulation Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Partitions	Associated Insulation (NSW) Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Plastics - Products - Mfrs &/or W'salers	K-Lite Pty Ltd	7 Sirius Road, Lane Cove	Street	23m	East
Armoured Car Services	Armaguard	4 Apollo Place, Lane Cove	Street	50m	East
Civil Engineers	Lockyer Construction Company Pty Ltd	4 Apollo Place, Lane Cove	Street	50m	East
Plastics - Moulders	Plastic Tool Manufacturing Pty Ltd	9 Sirius Road, Lane Cove	Street	50m	East
Plastics - Toolmakers & Engineers	Plastic Tooling Pty Ltd	9 Sirius Road, Lane Cove	Street	50m	East
Air Conditioning - Consultants	Belle Lumiere Electronics Pty Ltd	79 Mars Road, Lane Cove	Street	61m	South
Badges	Belle Lumiere	79 Mars Road, Lane Cove	Street	61m	South
graphite	Grozier Thomas & Son	79 Mars Road, Lane Cove	Street	61m	South
Abrasives	McGill Garth S	81 Mars Road, Lane Cove	Street	61m	South
Coasters & Mats - Table & Serving	Austalian Coaster Co	81 Mars Road, Lane Cove	Street	61m	South
Electroplating - Household & Miscellaneous	Industrial & Decorative Gold Plating Co Pty Ltd	81 Mars Road, Lane Cove	Street	61m	South

Electroplating - Industrial	Industrial & Decorative Gold Plating Co Pty Ltd	81 Mars Road, Lane Cove	Street	61m	South
Polyethylene Products	Lion Plastics Pty Ltd	81 Mars Road, Lane Cove	Street	61m	South
Printed Circuits	Industrial & Decorative Gold Plating Co Pty Ltd	81 Mars Road, Lane Cove	Street	61m	South
Medical Supplies	Janssen Pharmaceutical Pty Ltd	4 Sirius Road, Lane Cove	Street	63m	East
Pharmaceutical Products - Mfrs &/or W'salers	Janssen Pharmaceuticals Pty Ltd	4 Sirius Road, Lane Cove	Street	63m	East
Butchers' & Smallgoods Mfrs. Supplies	Wells Saws (Roots Walter Pty Ltd)	5 Apollo Place, Lane Cove	Street	72m	East
Compressed Air Control Equipment	Roots Walter Pty Ltd	5 Apollo Place, Lane Cove	Street	72m	East
Data Processing Equipment	Magnetic Media Services Pty Ltd	5 Apollo Place, Lane Cove	Street	72m	East
Data Processing Supplies	Magnetic Media Services Pty Ltd	5 Apollo Place, Lane Cove	Street	72m	East
Data Processing Supplies	Verbatim Disks & Cassettes (Magnetic Media Services Pty Ltd)	5 Apollo Place, Lane Cove	Street	72m	East
Data Processing Supplies	Wabash Tape (Magnetic Media Services Pty Ltd)	5 Apollo Place, Lane Cove	Street	72m	East
Dust & Fume Control Equipment	Roots Walter Pty Ltd	5 Apollo Place, Lane Cove	Street	72m	East
Knitting Machines	Toyota Machines of Australia	5 Apollo Place, Lane Cove	Street	72m	East
Oil Spill Recovery or Dispersal	Roots Walter Pty Ltd	5 Apollo Place, Lane Cove	Street	72m	East
Vacuum Equipment & Systems	Roots Walter Pty Ltd	5 Apollo Place, Lane Cove	Street	72m	East
Chemicals - Agricultural	Nufarm Chemicals Pty Ltd	77 Mars Road, Lane Cove	Street	102m	South
Photo Copies &/or Copying Equipment	A B E Copiers Pty Ltd	13 Sirius Road, Lane Cove	Street	106m	East
Photo Copies &/or Copying Equipment	A B E Data Systems Pty Ltd	13 Sirius Road, Lane Cove	Street	106m	East
Photo Copies &/or Copying Equipment	Automated Business Equipment Pty Ltd	13 Sirius Road, Lane Cove	Street	106m	East
Photo Copies &/or Copying Equipment	U-Bix	13 Sirius Road, Lane Cove	Street	106m	East
Adhesives	Araldite Epoxy Adhesives	14 Orion Rd, Lane Cove	Street	116m	East
Adhesives	Ciba-Geigy Aust Ltd.	14 Orion Road, Lane Cove	Street	116m	East
Chemicals - Agricultural	Ciba-Geigy Aust Ltd	14 Orion Road, Lane Cove	Street	116m	East
Colours & Pigments Mfrs &/or W'salers	Ciba-Geigy Aust Ltd	14 Orion Road, Lane Cove	Street	116m	East

Fibreglass Materials	Araldite (Ciba-Geigy Aust Ltd)	14 Orion Road, Lane Cove	Street	116m	East
Insecticides & Fungicides	Ciba-Geigy Aust Ltd	14 Orion Road, Lane Cove	Street	116m	East
Pharmaceutical Products - Mfrs &/or W'salers	CIBA Pharmaceuticals	14 Orion Road, Lane Cove	Street	116m	East
Pharmaceutical Products - Mfrs &/or W'salers	Ciba-Geigy Aust Ltd	14 Orion Road, Lane Cove	Street	116m	East
Pharmaceutical Products - Mfrs &/or W'salers	Zyma Pharmaceuticals	14 Orion Road, Lane Cove	Street	116m	East
Plastics - Raw Materials	Ciba-Geigy Australia Ltd	14 Orion Road, Lane Cove	Street	116m	East
Electrical Appliances - Mfrs	World Handdyer Sales Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Garbage Disposal Units	In-Sink-Erator Sales Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Garbage Disposal Units	Macdonald J D Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
hand dryers - electric	MacDonald J D Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Incinerators	MacDonald J D Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Sweeping Machines - Industrial	MacDonald Johnson Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Waste Reduction & Disposal Equipment	MacDonald Johnson Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Waste Reduction & Disposal Services	MacDonald J D Engineering Co Pty Ltd	17 Sirius Road, Lane Cove	Street	124m	South
Chemical Suppliers	Gamlen (Australasia) Pty Ltd	25 Sirius Road, Lane Cove	Street	160m	South
Chemicals - Industrial - Mfrs &/or W'salers	Gamlen (Australasia) Pty Ltd	25 Sirius Road, Lane Cove	Street	160m	South
Film Productions &/or Laboratories	Samuelson Film Service (Aust) Pty Ltd	25 Sirius Road, Lane Cove	Street	160m	South
Water Softeners & Treatment	Gamlen (Australasia) Pty Ltd	25 Sirius Road, Lane Cove	Street	160m	South
Water Softeners & Treatment	Ionac Chemical Co	25 Sirius Road, Lane Cove	Street	160m	South
Electronic Engineers	Tecnico Electronics	67 Mars Road, Lane Cove	Street	192m	South East
Electronic Equipment Mfrs &/or W'salers	Philips Electronic Components & Materials	67 Mars Road, Lane Cove	Street	192m	South East
Electronic Parts Mfrs &/or W'salers	Tecnico Electronics	67 Mars Road, Lane Cove	Street	192m	South East
Fuses - Electric	Tecnico Electronics	67 Mars Road, Lane Cove	Street	192m	South East
Photo Electric Apparatus	Tecnico Electronics	67 Mars Road, Lane Cove	Street	192m	South East

Bolts & Nuts	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Address		
Fasteners - Industrial	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Address		
Repetition Engineers	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Address		
Screw Mfrs &/or W'salers	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Address		
Bond & Free Stores	De Luxe Free Stores Pty Ltd	Mars Road, Lane Cove	Address		
Carriers - Heavy	De Luxe Parcel Delivery Pty Ltd	Mars Road, Lane Cove	Address		
Furniture Removals & Storage	De Luxe Removals & Storage	Mars Road, Lane Cove	Address		
Transport Services	De Luxxe Taxi Truck & Carrying Co Pty Ltd	Mars Road, Lane Cove	Address		
Carriers - Heavy	Gibson D F Pty Ltd	Mars Road, Lane Cove	Address		
Carriers - Light	Northbridge Taxi Truck & Carrying Co.	Mars Road, Lane Cove	Address		
Carriers - Light	Willoughby - Castlecrag Taxi Truck & Carrying Co	Mars Road, Lane Cove	Address		
cranes & travel towers - hire or servicing	A A Aarons Cranes &Cartage	Mars Road, Lane Cove	Address		
Furniture Removals & Storage	A A Aarons Removals & Storage	Mars Road, Lane Cove	Address		
Transport Services	A A Aarons Taxi Truck & Carrying Co	Mars Road, Lane Cove	Address		
Toolmakers	A S H Engineering Pty Ltd	Mars Road, Lane Cove	Address		

* If no distance is provided, address no longer exists.

1990 HISTORICAL COMMERCIAL & TRADE DIRECTORY DATA (200m Buffer)

Activity	Name	Address	Positional accuracy	Distance (m) *	Direction
Insulation Contractors	South Pacific Insulation Pty Ltd	7 Sirius Road, Lane Cove	Address	23m	East
Insulation Materials - Retail	South Pacific Insulation Pty Ltd	7 Sirius Road, Lane Cove	Address	23m	East
Printers - General	Roycroft Printing (Sales) Pty Ltd	79 Mars Road, Lane Cove	Address	61m	South
Graphite	Grozier Thomas & Son	79 Mars Road, Lane Cove	Address	61m	South
Electroplating	Industrial & Decorative Gold Plating Co Pty Ltd	81 Mars Road, Lane Cove	Address	61m	South
Plastics - Products - Mfrs &/or W'salers	Tupperware Of Aust	81 Mars Road, Lane Cove	Address	61m	South

Plastics - Products - Mfrs &/or W'salers	Waratah Sales Pty Ltd	81 Mars Road, Lane Cove	Address	61m	South
Polyethylene Products	Lion Plastics Pty Ltd	81 Mars Road, Lane Cove	Address	61m	South
Hospital Equipment &/or Supplies	Medtel Pty Ltd	5 Orion Road, Lane Cove	Address	79m	East
Medical Equipment &/or Repairs	Medtel Pty Ltd	5 Orion Road, Lane Cove	Address	79m	East
Medical Supplies	Medtel Pty Ltd	5 Orion Road, Lane Cove	Address	79m	East
Electrical Appliances - Mfrs and W'salers	Wacent (Aust) Co PTy Ltd	11 Sirius Road, Lane Cove	Address	95m	East
Transport Services	A.A. Aarons Taxi Truck & Carrying Co	77 Mars Road, Lane Cove	Address	102m	South
Taxi Truck Services	Cammeray-Naremburn Taxi Truck & Carrying Co	77 Mars Road, Lane Cove	Address	102m	South
Taxi Truck Services	Northbridge Taxi Truck & Carrying Co	77 Mars Road, Lane Cove	Address	102m	South
Transport Services	A.A. Aarons Taxi Truck & Carrying Co	77 Mars Road, Lane Cove	Address	102m	South
Furniture Removals & Storage	A A Aarons Removals & Storage	77 Mars Road, Lane Cove	Address	102m	South
cranes & travel towers - hire or servicing	A A Aarons Cranes &Cartage	Mars Road, Lane Cove	Address	102m	South
Furniture Removals & Storage	De Luxe Free Stores	77 Mars Road, Lane Cove	Address	102m	South
Bond & Free Stores	De Luxe Free Stores Pty Ltd	Mars Road, Lane Cove	Address	102m	South
Transport Services	De Luxe Taxi Truck & Carrying Co Pty Ltd	Mars Road, Lane Cove	Address	102m	South
Carriers - Heavy	De Luxe Parcel Delivery Pty Ltd	Mars Road, Lane Cove	Address	102m	South
Furniture Removals & Storage	De Luxe Removals & Storage	Mars Road, Lane Cove	Address	102m	South
Water Treatment & Equipment	Gelman Sciences PTy Ltd	27 Sirius Road, Lane Cove	Address	117m	South
Panel Beaters &/or Painters	Concise Bodyworks	15 Sirius Road, Lane Cove	Address	121m	East
Motor Engineers & Repairers (do not include the locality guide)	Drulaln Automotive Industries	15 Sirius Road, Lane Cove	Address	121m	East
Electrical Accessories - Mfrs &/or W'salers	Cable Accessories (Aust) Pty Ltd	2/11 Orion Road, Lane Cove	Address	179m	East
Photo Copying Services	Beta Office Equipment PTy Ltd	11 Orion Road, Lane Cove	Address	179m	East
Electric Motors & Generators	Toshiba International Corp Pty Ltd	9 Orion Road, Lane Cove	Address	179m	East
Cosmetics - Mfrs &/or W'salers	Bowman Helth & Beauty Pty Ltd	Unit 4, 9 Orion Road	Address	179m	East

Garbage Disposal Units	In-Sink-Erator	Unit 2, 9 Orion Road, Lane Cove	Address	179m	East
Plastics - Products - Mfrs &/or W'salers	Plastic Todling Manufacturing Pty Ltd	Apollo Place, Lane Cove	Street		
Taxi Truck Services	Gibson D F Pty Ltd	Mars Road, Lane Cove	Street		
Carriers-Light	Northbridge Taxi Truck & Carrying Co	Mars Road, Lane Cove	Street		
Carriers-Light	Willoughby-Castlecrag Taxi Truck & Carrying Co	Mars Road, Lane Cove	Street		
Bolts & Nuts	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Street		
Fasteners - Industrial	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Street		
Repetition Engineers	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Street		
Screw Mfrs &/or W'salers	Machin & Ewen Pty Ltd	Mars Road, Lane Cove	Street		
Plastics - Moulders	Plastic Tooling Manufacturing Pty Ltd	Apollo Place, Lane Cove	Street		

* If no distance is provided, address no longer exists.

Land Insight and resources use a number of different address georeferencing methods and characterised them according to the following criteria: completeness (match rates) and positional accuracy. When address do not contain specific street numbers or a match is not found, records identified as being in the surrounding areas are included for reference.

Historical dataset positional accuracy and georeferencing results explanation

Positional accuracy	Georeferenced	Description
Address	Located to the address level	*When street address and names fully matched.*
Street	Located to the street centroid	*When street names match but no exact address was found. Location is approximate.*
Building	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.*
Council	Located to the council area	*When council name match but no exact address was found. Location is approximate.*
Not georeferenced	Not found	*When it was not georeferenced, and address could not be found.*

Section 3 Other Environmental Constraints

3.1 FEDERAL, STATE AND LOCAL HERITAGE

Map 9 (500m Buffer)

Local Environment Plan (LEP) Heritage

Site Name	Site ID	Significance	Type	Distance (m)*	Direction
Chicago Mills, 160 Epping Road	A6	Local	Item - Archaeological	0.00	north
Cumberland Paper Mills, Epping Road	I214	Local	Item - General	44	east
9999	59	State	Item - General	194	west
Boobajool Reserve (open space)	96	Local	Item - General	245	west
9999	59	State	Item - General	347	north
Boobajool Reserve (open space)	96	Local	Item - General	369	west

National Heritage List (NHL)

Site Name	Site ID	Class	Status	Distance (m)	Direction
Not identified					

Register of the National Estate (RNE)

Site Name	Site ID	Class	Status	Distance (m)	Direction
Parramatta and Lane Cove Rivers Landscapes	14309	Natural	Indicative Place	0.00	onsite

Non-Aboriginal heritage item (Local)

Site Name	Site ID	Class	Status	Distance (m)	Direction
Not identified					

Non-Aboriginal heritage item (SHR)*

Site Name	Site ID	Listing nº	Plan nº	Distance (m)	Direction
Not identified					

*State Heritage Register

Commonwealth Heritage List (CHL)

Site Name	Site ID	Class	Status	Distance (m)	Direction
Not identified					

World Heritage Area (WHA)

Site Name	Site ID	IUCN	Status	Distance (m)	Direction
Not identified					

3.2 BUSHFIRE PRONE LAND

Map 10 (500m Buffer)

Category	On the Property?	Within Record Search Buffer?
Vegetation Category 1	Yes	Yes
Vegetation Category 2	Yes	Yes
Vegetation Buffer	Yes	Yes

3.3 STATE ENVIRONMENTAL PLANNING POLICY 14, 26 AND 71

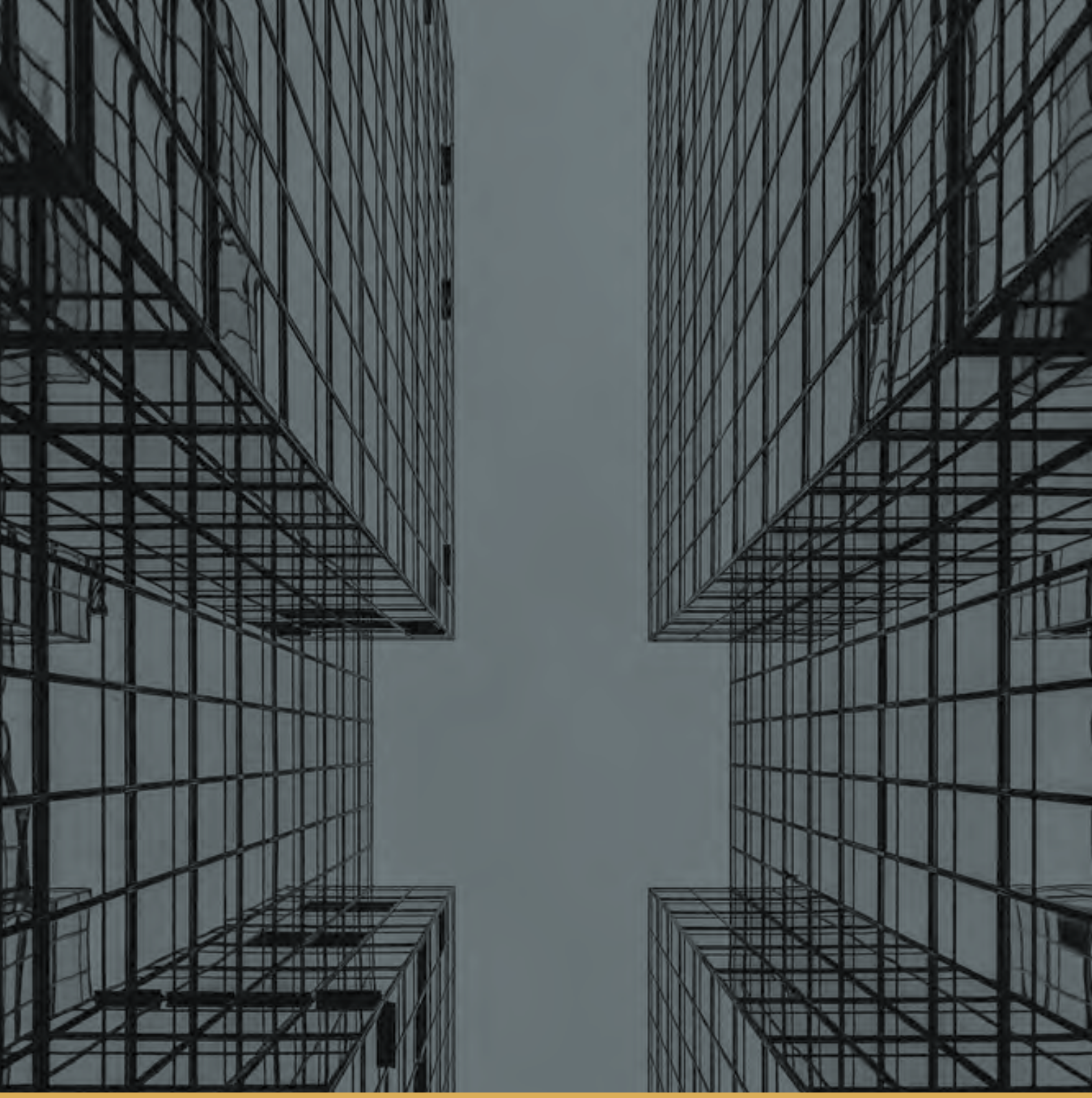
Map 10 (500m Buffer)

Type	Name	ID	Effective	On the Property?	Within Record Search Buffer?
Not identified					

3.4 FLOOD HAZARD AREA

Map 10 (500m Buffer)

Name	On the Property?	Within Record Search Buffer?
Not identified	Not identified	Not identified

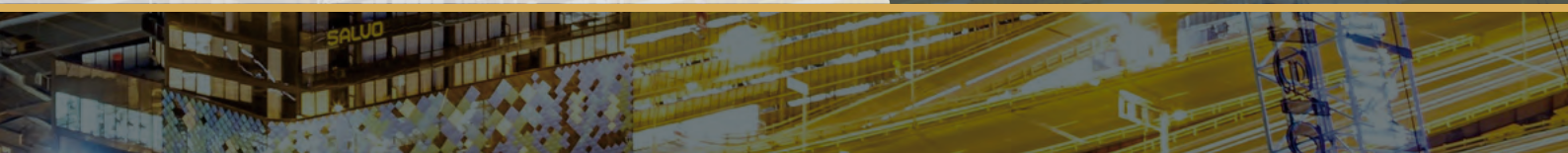


LAND INSIGHT & RESOURCES

A 4307/4 Daydream Street, Warriewood NSW 2102
T 02 9979 1720
E info@liresources.com.au
W www.liresources.com.au

ATTACHMENT A

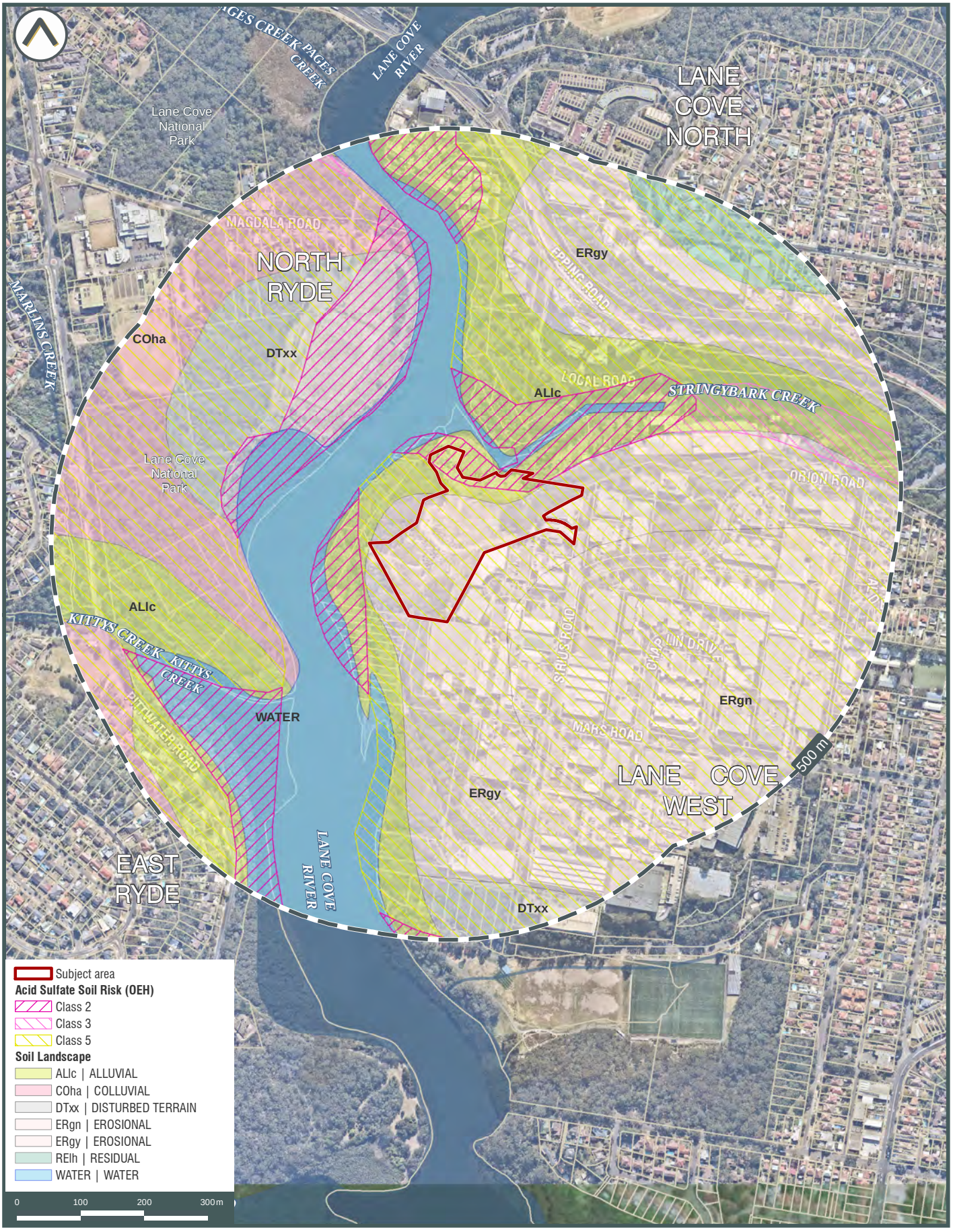
Report Maps



SUBJECT AREA AND SENSITIVE RECEPTORS

LAND INSIGHT & RESOURCES

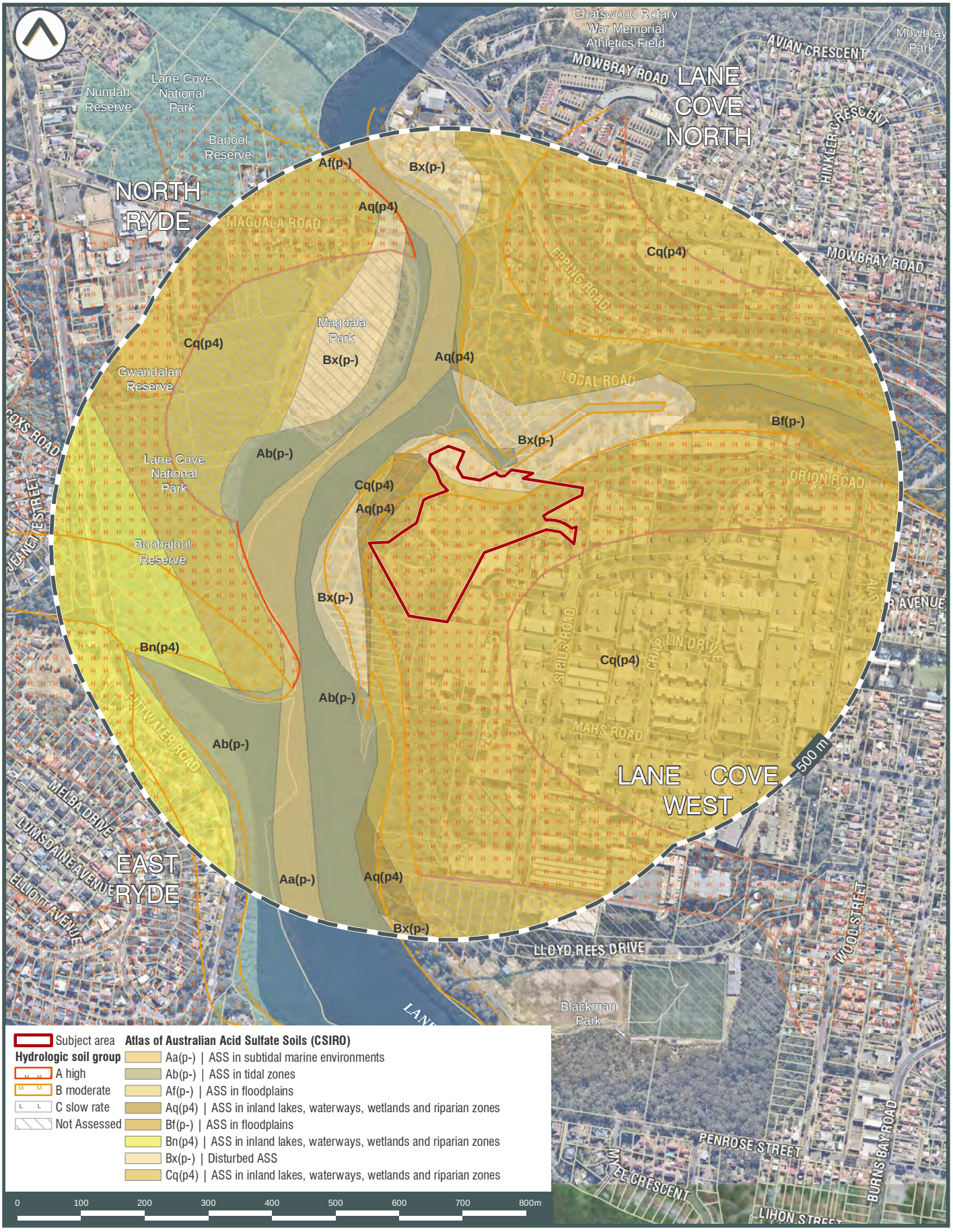
MAP 1



SOIL LANDSCAPES AND ACID SULFATE SOIL RISK

LAND INSIGHT & RESOURCES

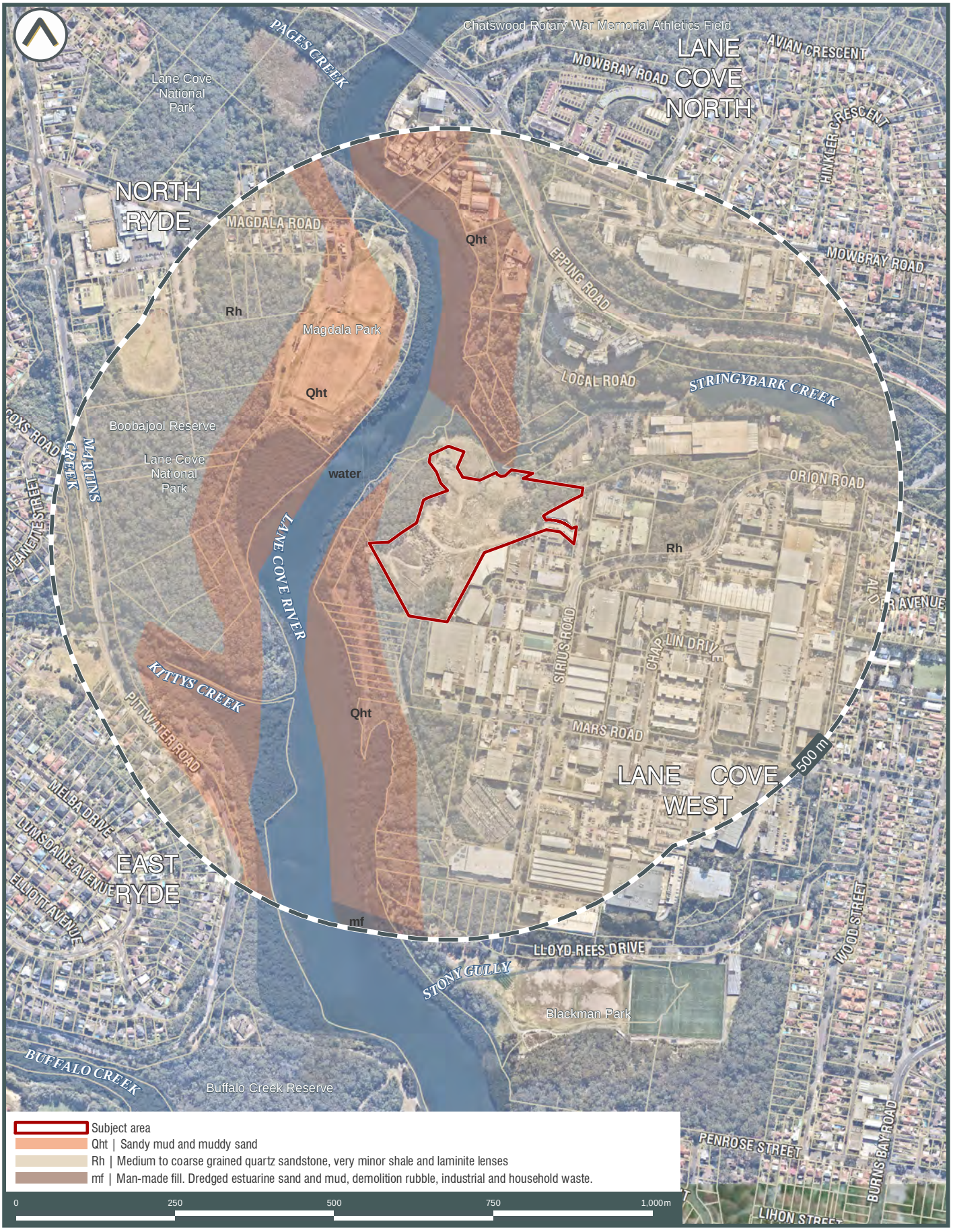
MAP 3a



ATLAS OF AUSTRALIAN ACID SULFATE SOILS AND SALINITY

LAND INSIGHT & RESOURCES

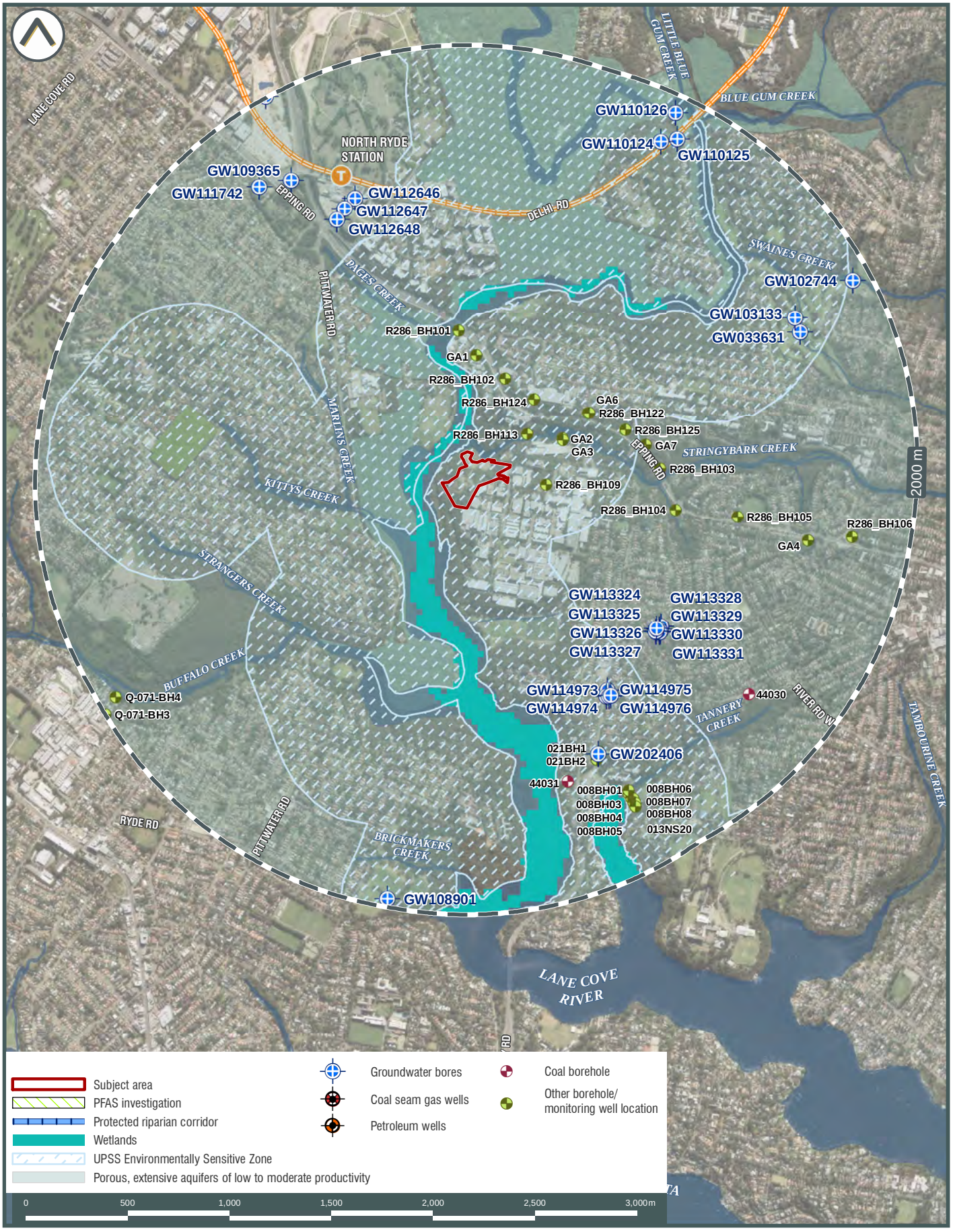
MAP 3b



GEOLOGY

LAND INSIGHT & RESOURCES

MAP 4



HYDROGEOLOGY, GROUNDWATER BORE AND COAL SEAM GAS WELL LOCATIONS

LAND INSIGHT & RESOURCES

MAP 5

EPA RECORDS, SITES NOTIFIED, FORMER GASWORKS SITES & PFAS INVESTIGATION

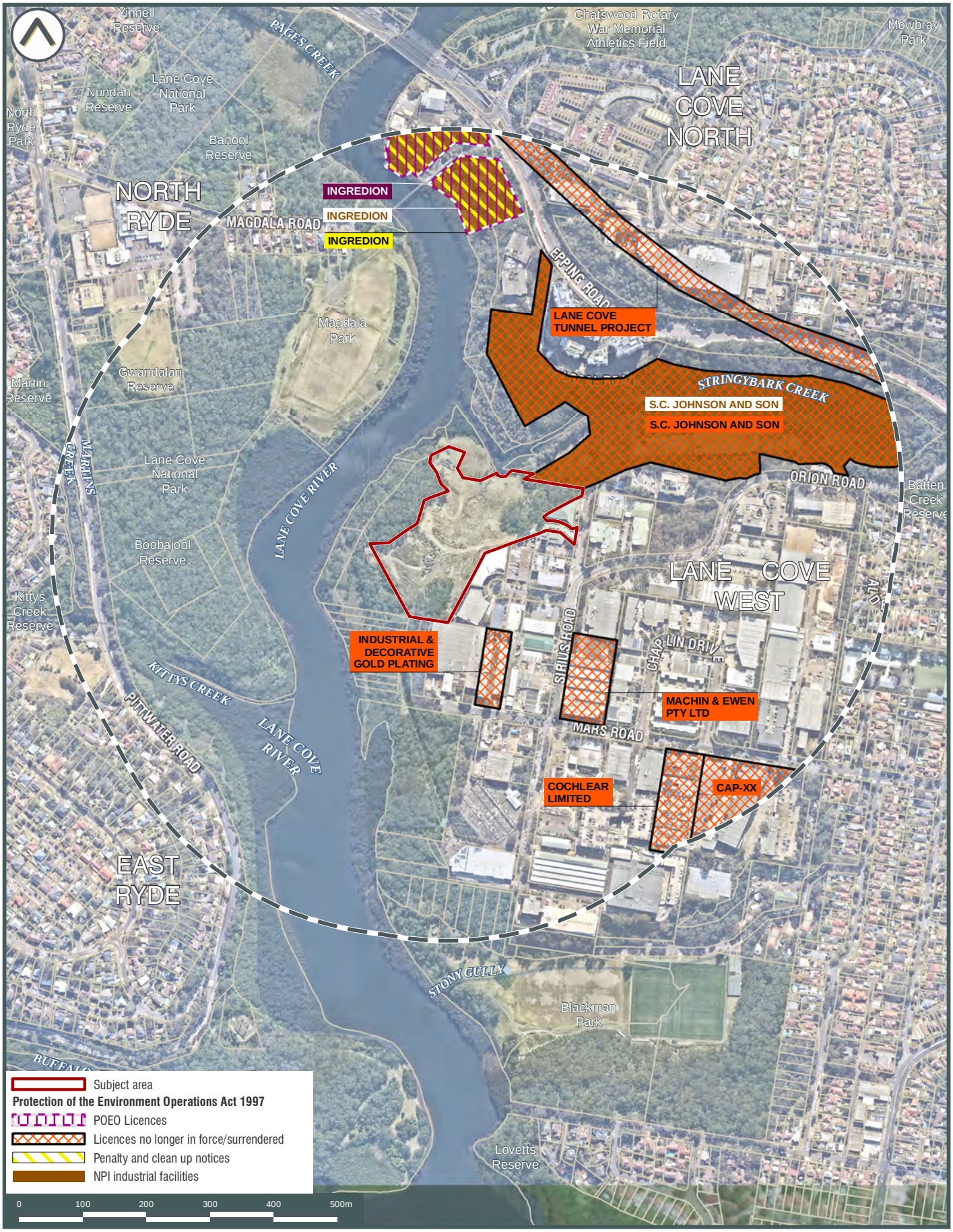
LAND INSIGHT & RESOURCES

MAP 6

POTENTIALLY CONTAMINATING ACTIVITIES

LAND INSIGHT & RESOURCES

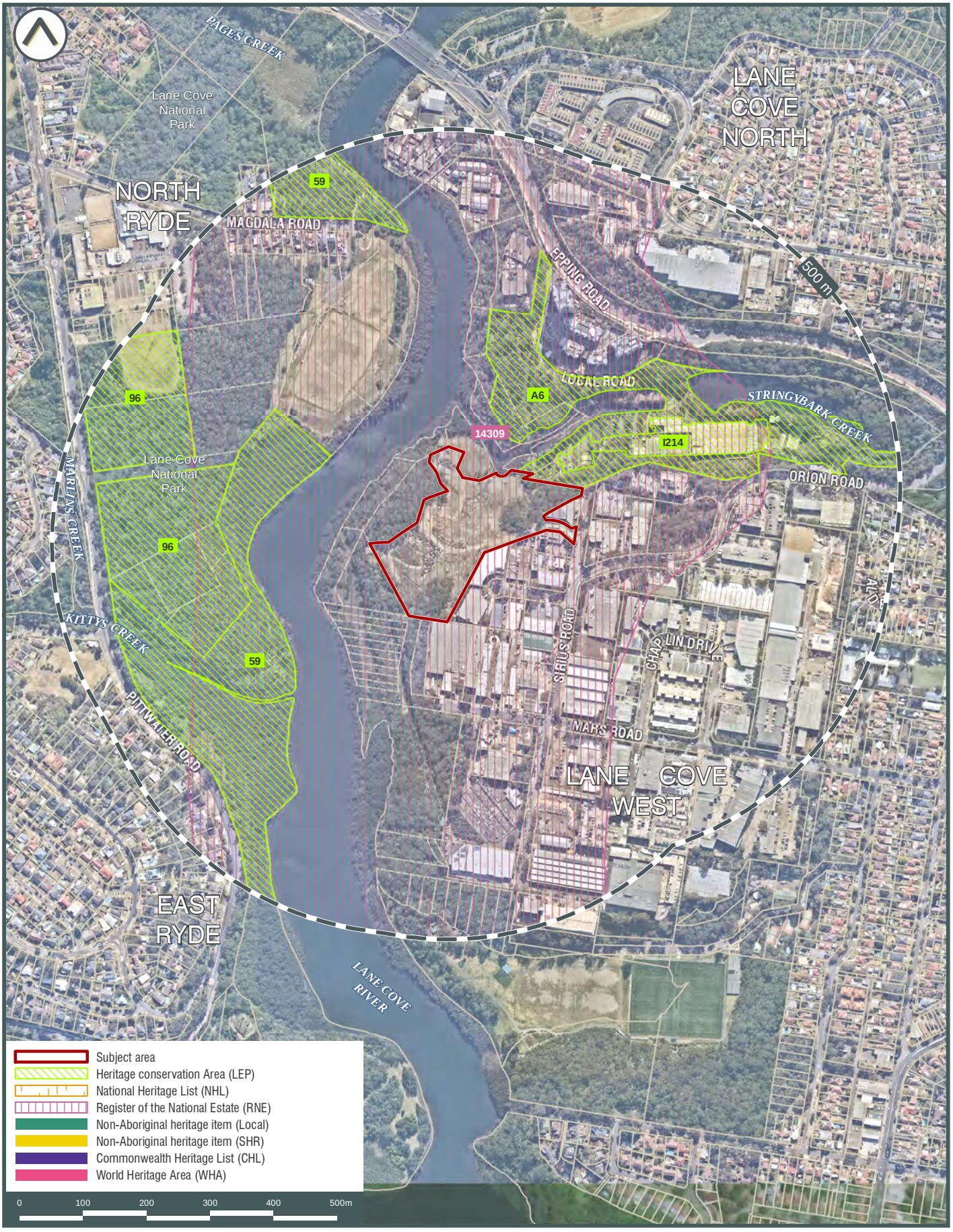
MAP 7



LICENSING UNDER THE POEO ACT 1997 AND NPI FACILITIES

LAND INSIGHT & RESOURCES

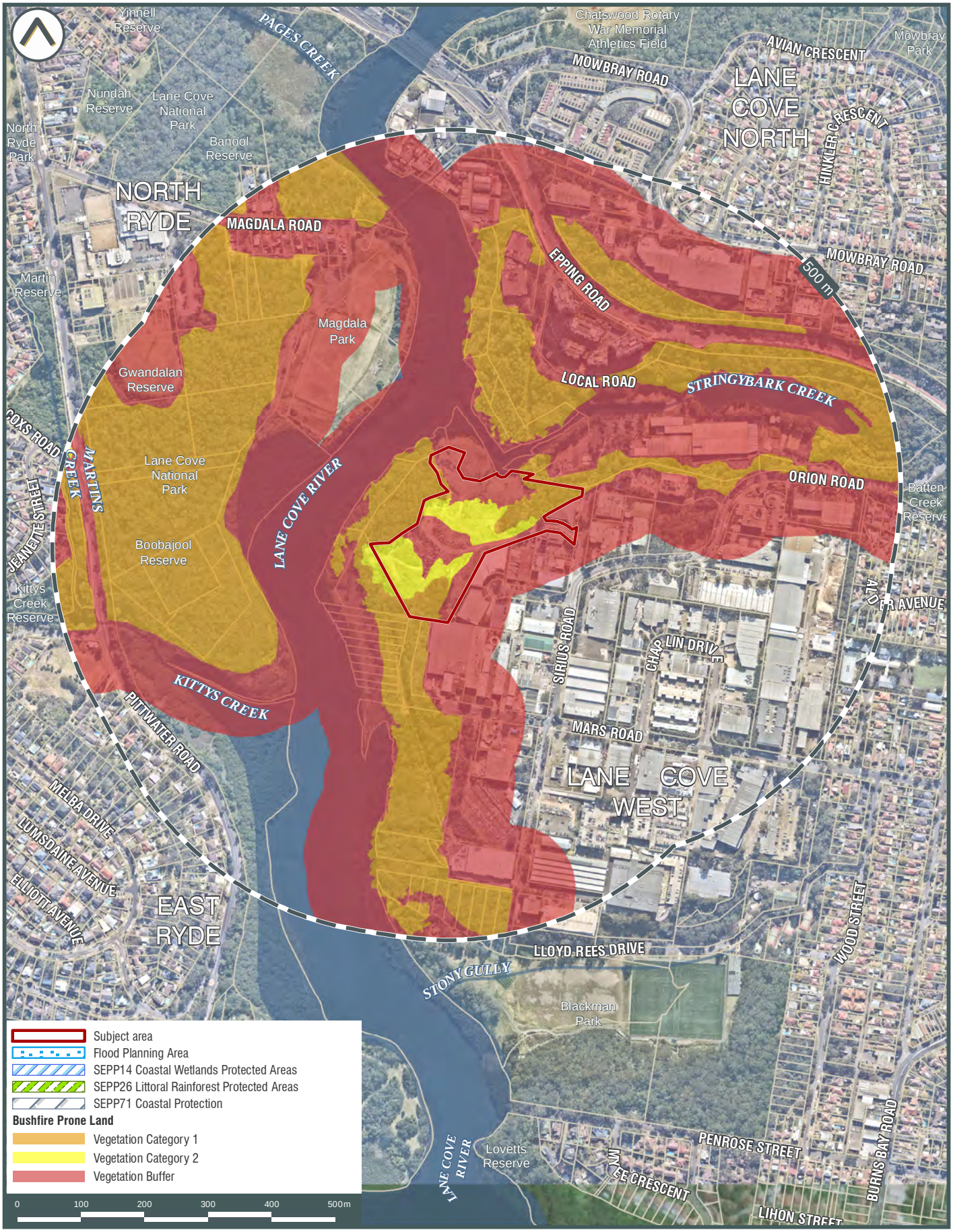
MAP 8



HERITAGE

LAND INSIGHT & RESOURCES

MAP 9



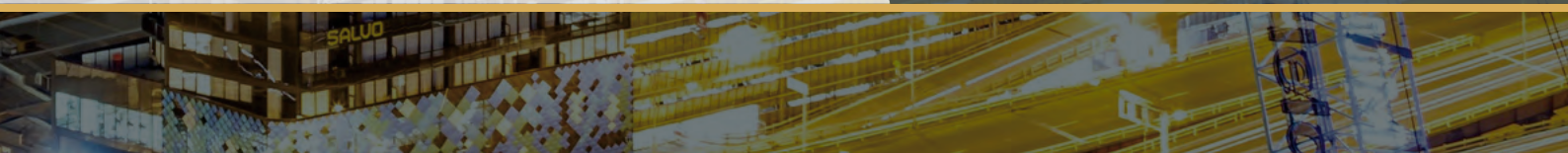
BUSHFIRE PRONE LAND

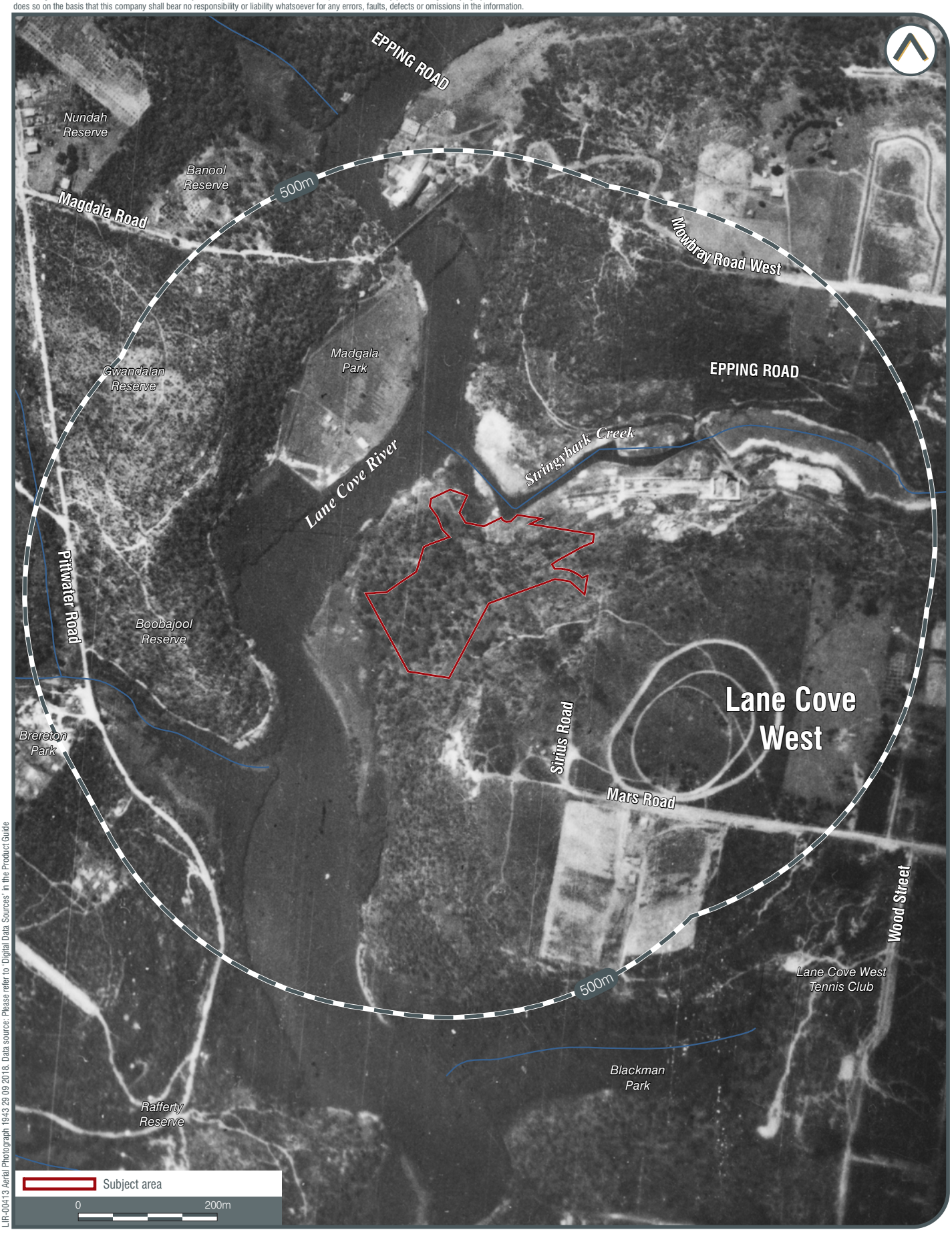
LAND INSIGHT & RESOURCES

MAP 10

ATTACHMENT B

Historical Imagery





LIR-00413 Aerial Photograph 1943 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1930

LAND INSIGHT & RESOURCES

MAP 11

LIR-00413 Aerial Photograph 1943 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1943

LAND INSIGHT & RESOURCES

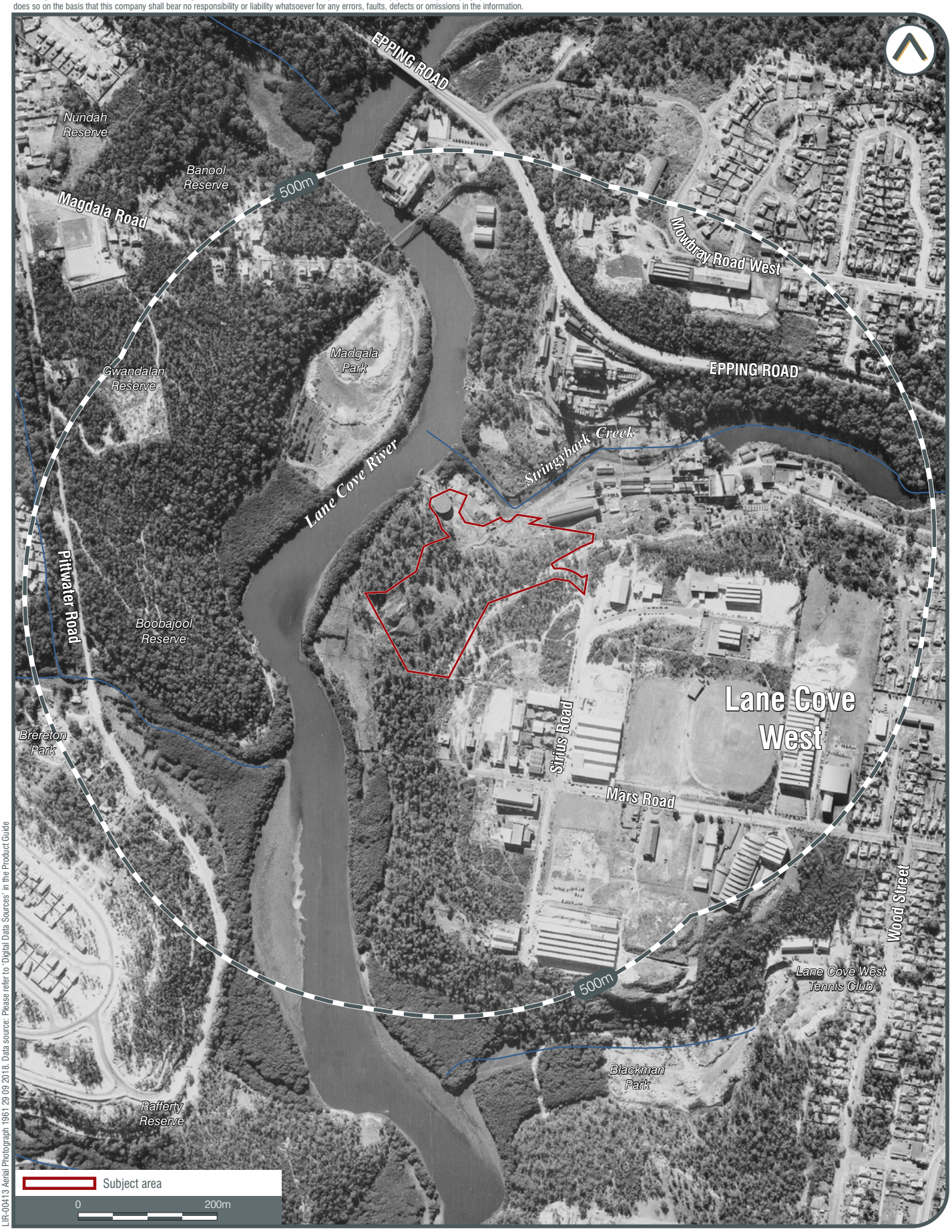
MAP 12

LIR-00413 Aerial Photograph 1956 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1956

LAND INSIGHT & RESOURCES

MAP 13

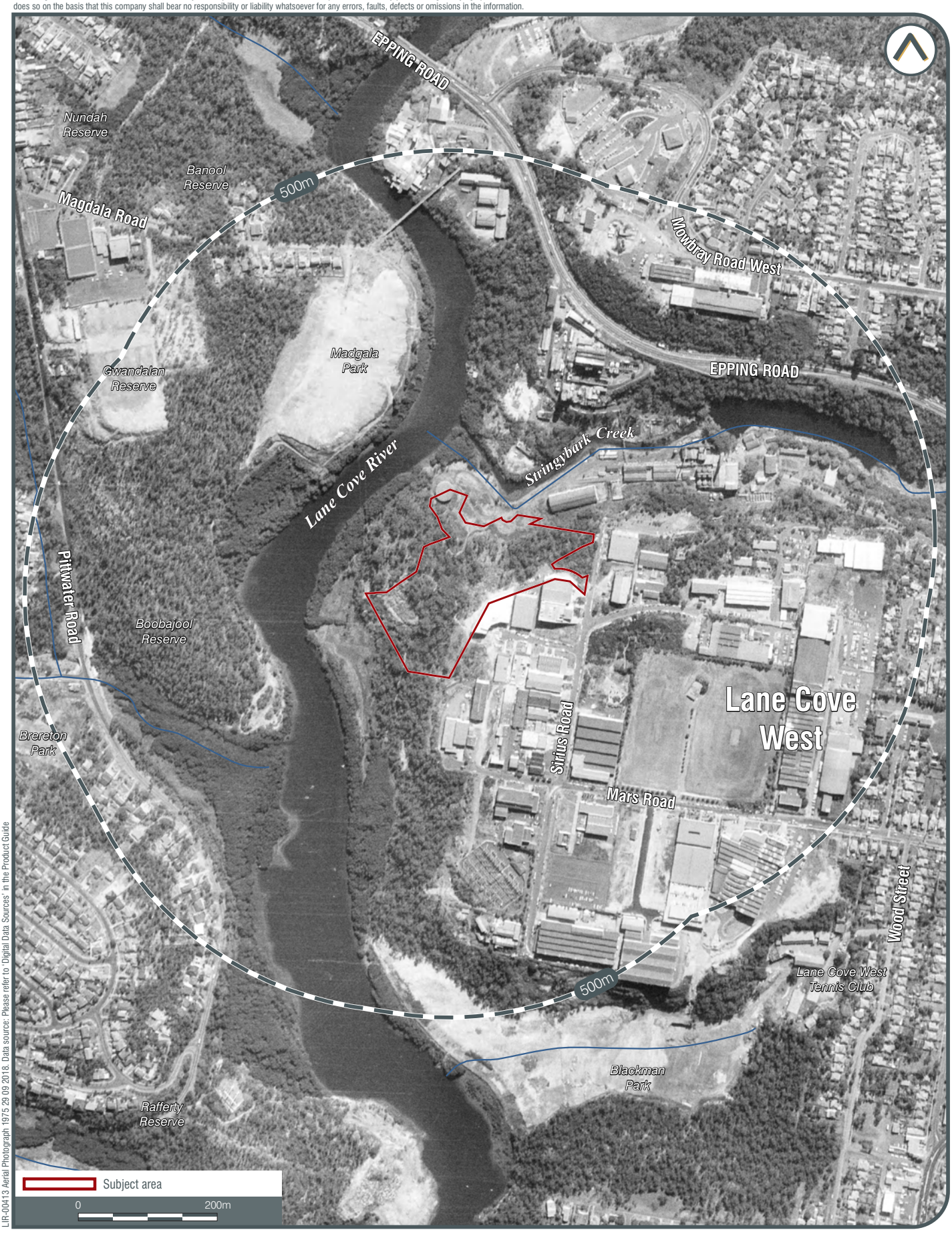


LIR-00413 Aerial Photograph 1961 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1961

LAND INSIGHT & RESOURCES

MAP 14



LIR-00413 Aerial Photograph 1975 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1975

LAND INSIGHT & RESOURCES

MAP 15

LIR-00413 Aerial Photograph 1986 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1986

LAND INSIGHT & RESOURCES

MAP 16

LIR-00413 Aerial Photograph 1994 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1994

LAND INSIGHT & RESOURCES

MAP 17

LIR-00413 Aerial Photograph 2004 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2004

LAND INSIGHT & RESOURCES

MAP 18

LIR-00413 Aerial Photograph 2010 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2010

LAND INSIGHT & RESOURCES

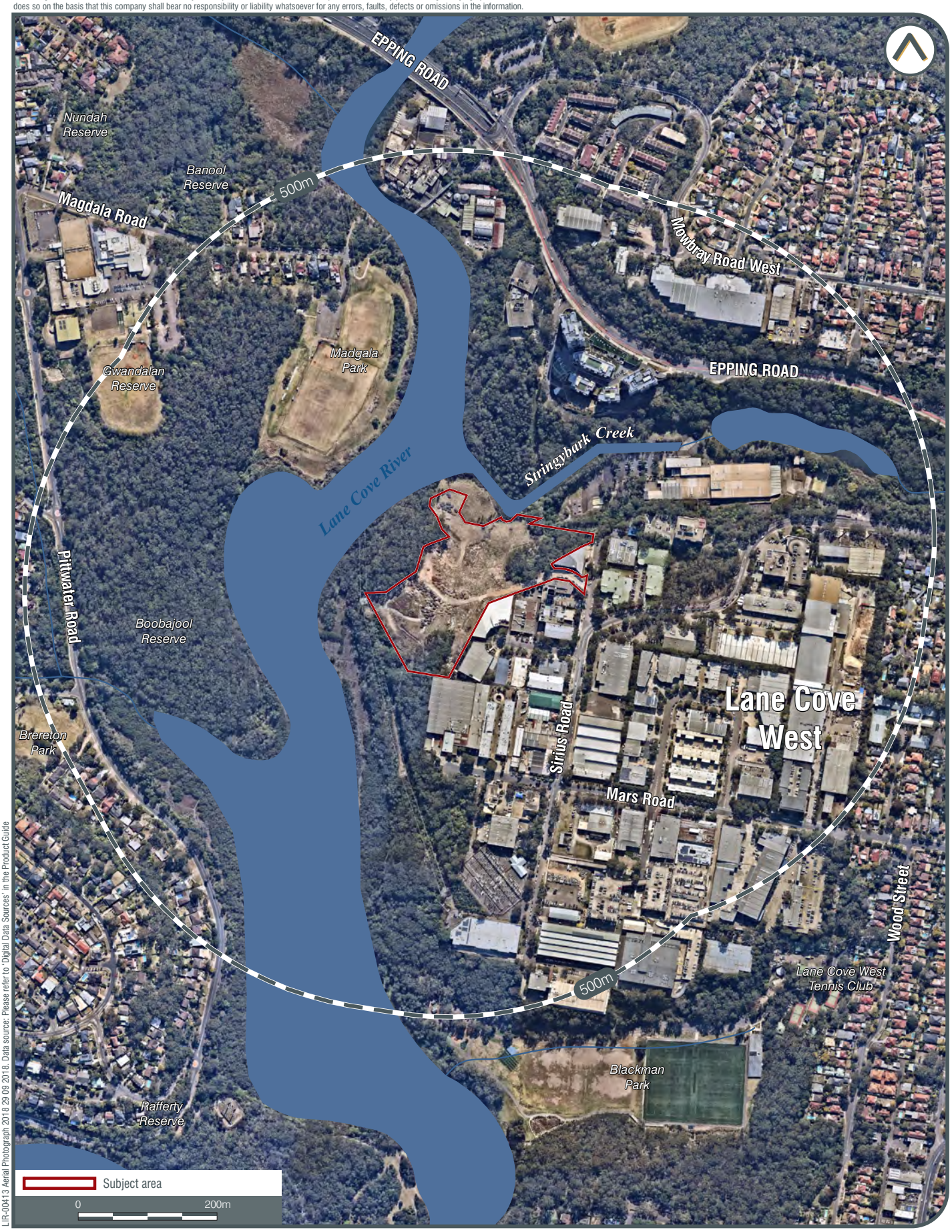
MAP 19

LIR-00413 Aerial Photograph 2014 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2014

LAND INSIGHT & RESOURCES

MAP 20



LIR-00413 Aerial Photograph 2018 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 2018

LAND INSIGHT & RESOURCES

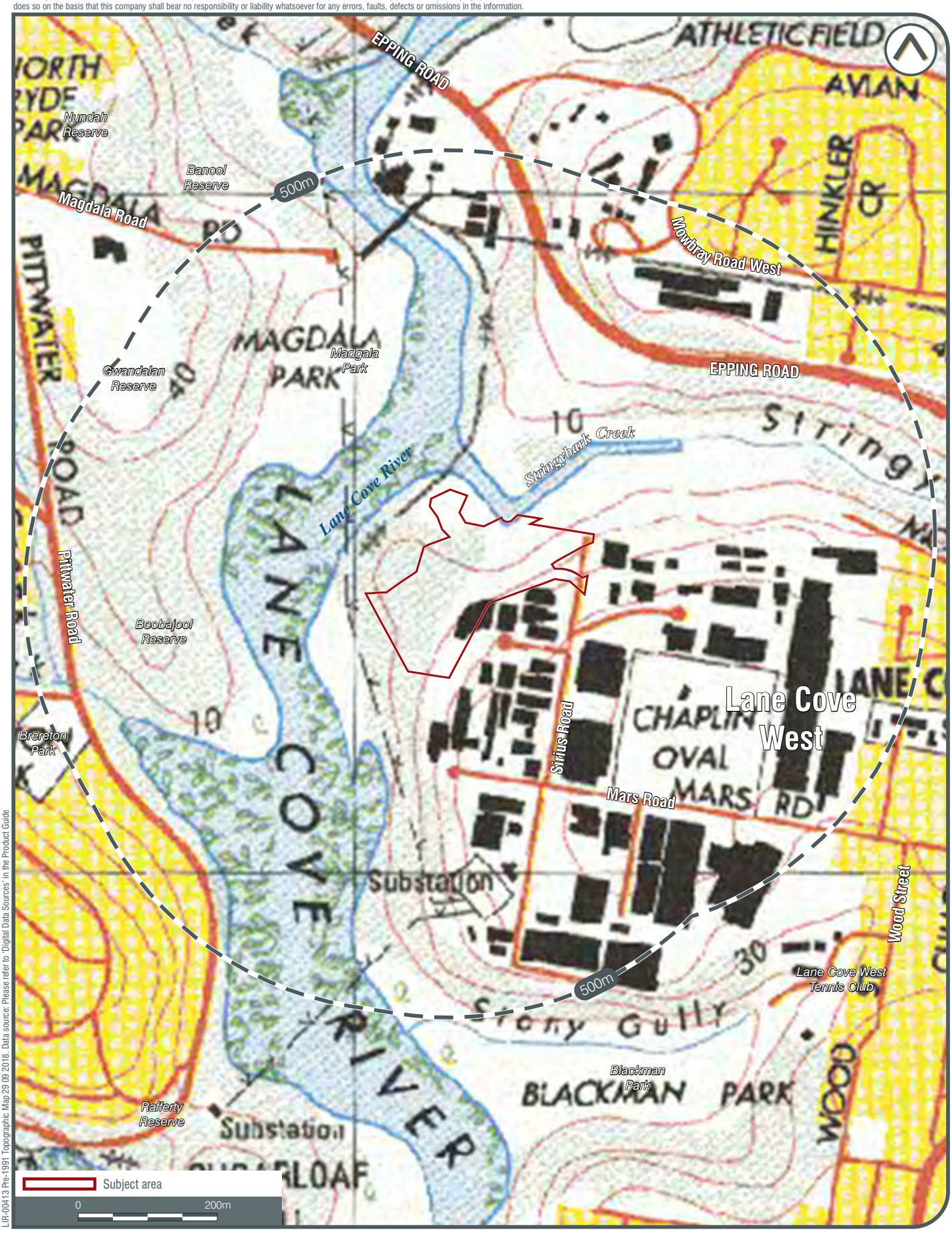
MAP 21

LIR-00413 Historic Zoning Map 02.10.2018. Data source: County of Cumberland Planning Scheme 1951

HISTORIC ZONING MAP - 1951

LAND INSIGHT & RESOURCES

MAP 22

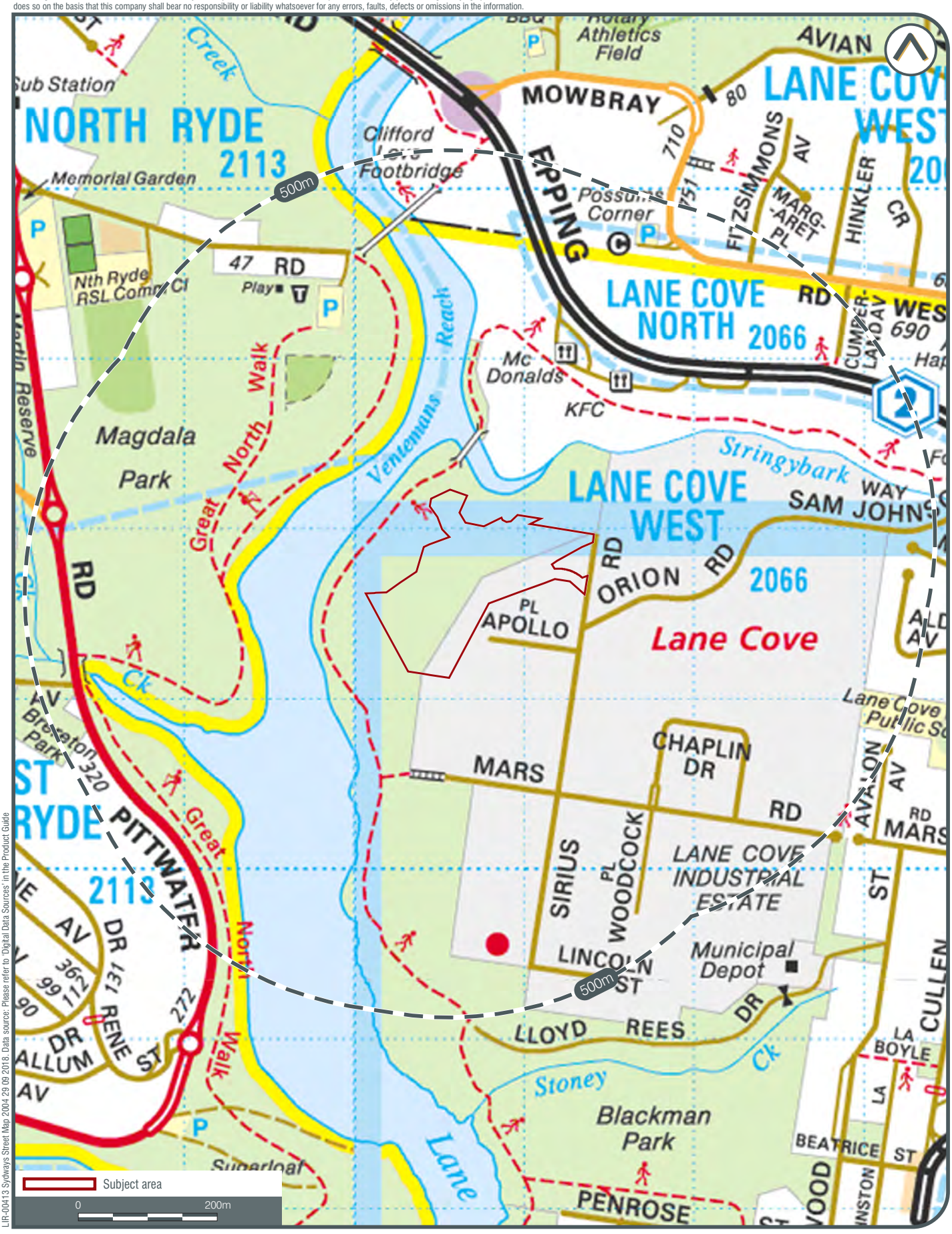


LIR-00413 Pre-1991 Topographic Map 23 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

PRE-1991 TOPOGRAPHIC MAP

LAND INSIGHT & RESOURCES

MAP 23



LIR-00413 Sydways Street Map 2004 29 09 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

SYDWAYS STREET MAP - 2004

LAND INSIGHT & RESOURCES

MAP 24

Appendix B: Site Photographs

AirTrunk PSI - Site Photographs

Photo 1. View of the of access road from the eastern site entry.

Photo 2. View of the central portion of the site.

Photo 3. View of the northern portion of the site.

Photo 4. Tarred section of the access road. Left of the

Photo 5. Stockpiles in the centre of the site and disused excavator.

Photo 6. Stockpiled material.

Photo 7. Signage on the western boundary fence.

Photo 8. Bunding on the western boundary.

Photo 9. Engineered drainage.

Photo 10. Southern perimeter of the site.

Photo 11. Abandoned equipment in the eastern portion of the site.

Photo 12. South-eastern boundary of the site.

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