ENVIRONMENTAL INVESTIGATION SERVICES

REPORT

TO

BLACKTOWN WORKERS SPORTS CLUB

C/- PAYNTER DIXON CONSTRUCTIONS PTY LTD

ON

STAGE 1 ENVIRONMENTAL SITE ASSESSMENT

FOR

SITE A: PROPOSED OUT DOOR SPORTS FACILITIES – 221 WALTERS ROAD, ARNDELL PARK.

SITE B: RESIDENTIAL AGE CARE FACILITY AND CHILDCARE CENTRE – 170 RESERVOIR ROAD, ARNDELL PARK

AT

BLACKTOWN WORKERS SPORTS CLUB, OFF RESERVOIR ROAD, ARNDELL PARK, NSW

VOLUME 1 OF 2

8 MARCH 2018

Project ID: E28870KBrpt-rev3

Postal Address: PO Box 976, North Ryde BC NSW 1670
Tel: 02 9888 5000 • Fax: 9888 5004
EIS is a division of Jeffery and Katauskas Pty Ltd • ABN 17 003 550 801

Document Distribution Record		
Report Reference	**Distribution**	**Report Date**
Project ID: E28870KBrpt draft	Blacktown Workers Sports Club and Paynter Dixon Constructions	27 November 2015
Project ID: E28870KBrpt rev1	Blacktown Workers Sports Club and Paynter Dixon Constructions	21 December 2015
Project ID: E28870KBrpt rev2	Blacktown Workers Sports Club and Paynter Dixon Constructions	19 February 2016
Project ID: E28870KBrpt-rev3	Blacktown Workers Sports Club and Paynter Dixon Constructions	8 March 2018

Original Report prepared by:

Vittal Boggaram
Associate Environmental Scientist

Report reviewed by:

Adrian Kingswell
Principal Environmental Scientist

OPENING STATEMENT (March 2018)

This report was originally issued in February 2016 (Ref: E28870KBrpt rev2). At the request of Paynter Dixon Construction Pty Ltd Environmental Investigation Services (EIS) have reviewed the February 2016 report and provided a summary of the works completed to date and proposed changes to the development. The report reference has been updated to E28870KBrpt rev3 dated 8 March 2018. The text of the original report remains unchanged. The list of amendments to the original report is provided below.

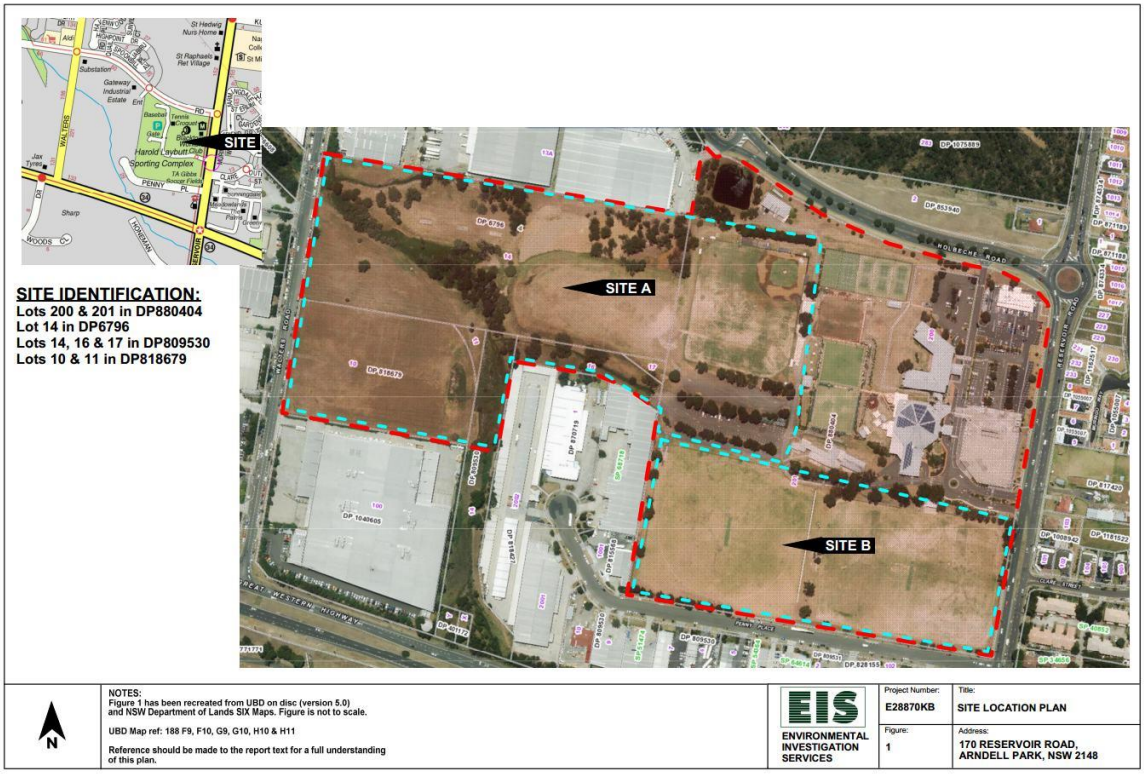
1. Site A now excludes the baseball field and is referred to as the 'revised Site A'. The surface area of the revised Site A is approximately 7ha (excluding the riparian reserve).
2. The revised Site A has been the subject of a detailed Stage 2 site investigation.
3. A Remediation Action Plan (RAP) was prepared for the revised Site A. Remediation works are currently underway at the revised Site A and the majority of site works have been completed.
4. Apart from the data contained in this report no additional investigation has been undertaken at Site B to date.
5. The proposed development for Site B described in Section 1.1.2 of the report has been revised. The proposed development is for independent living unit (ILU) and a residential aged care facility (RACF). Based on the supplied 'Site Compatibility Certificate' architectural drawings prepared by Allen Jack & Cottier Architects (Job No. 15029, Drawing Nos. SK0001, SK0100, SK0900, SK1000, SK1001, SK1002, SK1003, SK2000, SK3000, SK5000 & SK8000, dated 22 February 2018), we understand that the proposed ILU and RACF development will comprise the construction of thirteen buildings (Buildings A to L, and the RACF), which will range in height from four to fourteen stories. All buildings will be underlain by at least one basement level, as detailed below:
    - Proposed Buildings A, B & C will overlie a common basement car parking level, which we expect will require excavation to a maximum depth of approximately 4.5m below existing grade;
    - Buildings D & E will overlie a common basement car parking level, which we expect will require excavation to a maximum depth of approximately 3m below existing grade;
    - Buildings F & G will overlie two common basement car parking levels, which we expect will require excavation to a maximum depth of approximately 6m below existing grade;
    - Buildings H & I will overlie two common basement car parking levels, which we expect will require excavation to a maximum depth of approximately 6m below existing grade;
    - Building J will be underlain by a basement car parking level, which we expect will require excavation to a maximum depth of approximately 3m below existing grade;
    - Buildings K & L will overlie a common basement car parking level, which we expect will require excavation to a maximum depth of approximately 3m below existing grade;
    - The RACF will be underlain by a basement car parking level, which we expect will require excavation to a maximum depth of approximately 4.5m below existing grade.

The footprints of the proposed basements will be set back at least 15m and 6m from the eastern (Reservoir Road) and southern (Penny Place) site boundaries, respectively.

The proposed development also includes the construction of a new road network, as well as a pedestrian bridge linking Building C to BWSC. Structural loads typical of this type of development have been assumed.

6. Our geotechnical division, JK Geotechnics, have prepared a report on a Due Diligence Geotechnical Investigation for the proposed ILU & RACF Development (Ref: 28870A6rpt dated 8 March 2018). The geotechnical investigation was undertaken concurrently with Stage 1 environmental site assessment. The Stage 1 environmental assessment report must be read in conjunction with JK geotechnics report.

END OF OPENING STATEMENT



This report has been prepared to present the results of a Stage 1 Environmental Site Assessment to support the master plan of the Blacktown Workers Sports Club. Given the integrated nature of the master plan this report has been prepared for all three components needed to facilitate the development:

- Planning Proposal to include 'recreation facility (outdoor)' on Lot 14 Sec 4 DP6796 and Lot 10 DP818679.
- Development Application for the outdoor sports facilities on Lot 14 Sec 4 DP6796 and Lot 10 DP818679.
- Site Compatibility Certificate for a Seniors Living Village on Lot 201 DP880404.

EXECUTIVE SUMMARY

Paynter Dixon Construction Pty Ltd on behalf of Blacktown Workers Sports Club (BWSC) ('the client') commissioned Environmental Investigation Services (EIS) to undertake a Stage 1 Environmental Site Assessment (ESA) for the proposed master plan development at the Blacktown Workers Sports Club located off Reservoir Road, Arndell Park, NSW. The site location and the study area are shown on the figures attached in the appendices.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed master plan development. EIS understand that the proposed masterplan will include the redevelopment of the south and west sections of the wider site to provide improved sporting facilities and a residential complex which will include approximately 800 units for senior living. The master plan will be staged as follows:

- Site A - Sporting Facilities (in the west section); and
- Site B - Residential Complex (in the south-east section).

The scope of work for this study included the following: review of previous investigation reports prepared for the site; review of site information including historical information available for the site; identify Areas of Environmental Concern (AEC); preparation of a Preliminary Conceptual Site Model (CSM); design and implementation of a sampling, analysis and quality plan (SAQP); interpretation of the analytical results against the adopted Site Assessment Criteria (SAC); Data Quality Assessment (DQA); Tier 1 Risk Assessment and review of CSM.

A review of the site history information indicated the following historical landuse:

- Rural / vacant land (1930 to prior 1943) - The 1930 aerial photograph indicates that the site was rural land with large sections occupied by bushland. A few dwellings were located on the wider site;
- Rural / poultry (1943 to prior 1970) - The site history information indicates that a large poultry farm was located on the north-east section of the wider site. The west section of the wider site was occupied by individual rural properties; and
- Recreational / Club House (1970 to present) - The site history information indicates that the wider site was progressively developed for recreational landuse. Significant earthworks was underway in the 1970s to facilitate the new development. The sporting facilities were constructed between 1970 and 1991. New buildings were constructed between 1991 and 2004.

The Conceptual Site Model (CSM) identified the following Areas of Environmental Concern (AEC):

- Fill Material (Entire Site) - The site has been historically filled to achieve the existing levels. The Stage 1 ESA encountered fill ranging in depth from 0.3m to 5.8mbgl. Deep fill was encountered in the central and east sections of the site. The DP 2004 report indicated that fill had been brought onto the site for unknown sources. The fill may have been imported from various sources and can contain elevated concentrations of contaminants.
- Poultry Farm and Rural Landuse (Point Source) - The site has been used for poultry and rural landuse. Numerous sheds containing hazardous building materials were demolished during this period. Chemicals such as pesticides could have been used at the site. Rubbish could have been buried at the site.
- Use of Herbicides in Waterways - The EPA POEO records indicate that herbicides have been used in the waterways which includes Bungarribee Creek. The herbicides could have impacted the sediment and soil along the creek.
- Hazardous Materials (Filled Areas) - The aerial photographs indicate that former buildings at the site were demolished prior to 1980s. The use of hazardous building material in the former buildings could have resulted in potential contamination. The DP 2004 report identified asbestos in fill as a cause of concern.
- Dryland Salinity (Regional Issue) - The site is located in an area classed as having a 'High Hazard or Risk' of dryland salinity. Dryland salinity can have an impact on the landscaping and built structures.

Samples for the Stage 1 ESA were obtained from 29 sampling points as shown on the attached Figure 2. This density is approximately 20% of the minimum sampling density recommended by the EPA. The sampling locations were placed on a judgement plan to obtain a preliminary understanding of the subsurface conditions and to identify the depth of fill for design of a more detailed targeted assessment.

Selected soil samples from the locations were analysed for contaminants of potential concern (CoPC) and salinity parameters. The laboratory results were assessed against the SAC adopted for the study. A review of the results indicated the following:

Soil Contamination – Fill Material:
Significant widespread soil contamination was not encountered in the sampling locations. Minor elevations of EILs were encountered in Site A. These elevations are considered to be associated with the uncontrolled fill imported onto the site from unknown sources.

Two FCF fragments encountered in test pits TP226 and TP227 in Site A were analysed for asbestos. The samples encountered Chrysotile and Amosite asbestos in the bonded form. The site history indicates that numerous former buildings were demolished at the site. The DP 2004 report identified asbestos in fill as a cause of concern. Uncontrolled filling has occurred at the site which could have also resulted in importing asbestos containing material (ACM) along with the fill onto the site.

Due to the limited subsurface investigation undertaken for the study, the distribution of ACM in the fill has not been adequately characterised. Additional investigation will be required to better characterise the extent of asbestos contamination.

Use of Herbicides in Waterways:
The EPA records indicate that herbicides have been used in the waterways which includes Bungarribee Creek. The herbicides could have impacted the sediment and soil along the creek line. Additional investigation is required along the creek to assess the potential for herbicide contamination at the site.

Groundwater:
The groundwater table is relatively shallow in low lying sections of the site. The groundwater could have been impacted by contaminants including herbicides. Groundwater screening is required to better assess the impacts.

Soil Salinity:
The Stage 1 ESA has indicated that the site is impacted by dryland salinity. A summary of the salinity conditions are as follows:

- The soils at the site are either moderate or very saline. No distinct depth profiling was noted. The CCAA 2005 recommended concrete grade for slabs and footings in very saline soils is N32;
- The soil pH results ranged from 4.3 to 8.6 and are classed as very strongly acidic to strongly alkaline. The majority of the soils were generally within the optimum range for plant growth;
- The majority of the CEC values were within the moderate range which is typical of the soil formation encountered at the site and are generally indicative of the low levels of organic matter within the soils;
- The majority of the ESP results were above the 5% threshold and were classed as sodic to highly sodic;
- The soil pH and sulphate results indicate that the soils are mild to moderately aggressive towards buried concrete; and
- The soil resistivity, pH and chloride results indicate that the soils are mild to moderately aggressive towards buried steel.

The groundwater salinity conditions have not been assessed for this study. The salinity conditions in groundwater can be different to the soil conditions. Additional testing will be required in order to prepare a Salinity Management Plan (SMP) for the proposed development at the site.

Conclusion:

EIS consider that the site can be made suitable for the proposed master plan development provided the following recommendations are implemented to address the data gaps and to better manage/characterise the risks:

- Undertake a Preliminary Stage 2 ESA to address the data gaps identified in **Section 9.5;**
- Prepare a Salinity Management Plan (SMP) for the proposed development; and
- Prepare a Remediation Action Plan (RAP) for the proposed development. The RAP should include an Unexpected Finds Protocol (UFP) for the earthworks at the site.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of the report.

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ABBREVIATIONS

Ambient Background Concentrations	**ABC**
Added Contaminant Limits	**ACL**
Asbestos Containing Material	**ACM**
Australian Drinking Water Guidelines	**ADWG**
Area of Environmental Concern	**AEC**
Australian Height Datum	**AHD**
Acid Sulfate Soil	**ASS**
Above Ground Storage Tank	**AST**
Below Ground Level	**BGL**
Bureau of Meteorology	**BOM**
Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene	**BTEXN**
Cation Exchange Capacity	**CEC**
Contaminated Land Management	**CLM**
Chain of Custody	**COC**
Contaminant of Primary Concern	**CoPC**
Conceptual Site Model	**CSM**
Data Quality Indicator	**DQI**
Data Quality Objective	**DQO**
Ecological Assessment Criteria	**EAC**
Ecological Investigation Levels	**EILs**
Ecological Screening Level	**ESL**
Environmental Management Plan	**EMP**
Excavated Natural Material	**ENM**
Environmental Protection Agency	**EPA**
Environmental Site Assessment	**ESA**
Fibre Cement Fragments	**FCF**
General Approvals of Immobilisation	**GAI**
General Solid Waste	**GSW**
Health Investigation Level	**HILs**
Hardness Modified Trigger Values	**HMTV**
Health Screening Level	**HSLs**
International Organisation of Standardisation	**ISO**
Lab Control Spike	**LCS**
Light Non-Aqueous Phase Liquid	**LNAPL**
Local Government Authority	**LGA**
Map Grid of Australia	**MGA**
National Association of Testing Authorities	**NATA**
National Environmental Protection Measure	**NEPM**
Organochlorine Pesticides	**OCP**
Organophosphate Pesticides	**OPP**
Polycyclic Aromatic Hydrocarbons	**PAH**
Photo-ionisation Detector	**PID**
Practical Quantitation Limit	**PQL**
Preliminary Site Investigation	**PSI**
Quality Assurance	**QA**

ABBREVIATIONS

Quality Control	**QC**
Remediation Action Plan	**RAP**
Relative Percentage Difference	**RPD**
Restricted Solid Waste	**RSW**
Site Assessment Criteria	**SAC**
Sampling, Analysis and Quality Plan	**SAQP**
Site Audit Statement	**SAS**
Site Audit Report	**SAR**
Specific Contamination Concentration	**SCC**
Standard Penetration Test	**SPT**
Standard Sampling Procedure	**SSP**
Standing Water Level	**SWL**
Standard Sampling Procedure	**SSP**
Trip Blank	**TB**
Toxicity Characteristic Leaching Procedure	**TCLP**
Total Recoverable Hydrocarbons	**TRH**
Trip Spike	**TS**
Upper Confidence Limit	**UCL**
United States Environmental Protection Agency	**USEPA**
Underground Storage Tank	**UST**
Virgin Excavated Natural Material	**VENM**
Volatile Organic Compounds	**VOC**
Volatile Organic Chlorinated Compound	**VOCC**
Workplace, Health and Safety	**WHS**

1 INTRODUCTION

Paynter Dixon Construction Pty Ltd on behalf of Blacktown Workers Sports Club (BWSC) ('the client') commissioned Environmental Investigation Services (EIS)[1] to undertake a Stage 1 Environmental Site Assessment (ESA) for the proposed master plan development at the Blacktown Workers Sports Club located off Reservoir Road, Arndell Park, NSW. The site location and the study area are shown on the figures attached in the appendices.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed master plan development.

EIS understand that the proposed masterplan will include the redevelopment of the south and west sections of the wider site to provide improved sporting facilities and a residential complex which will include approximately 800 units for senior living. The master plan will be staged as follows:

- Site A - Sporting Facilities (in the west section); and
- Site B - Residential Complex (in the south-east section).

A geotechnical investigation was undertaken in conjunction with this assessment by JK Geotechnics[2]. The results of the investigation are presented in a separate report (Ref. 28870ADrpt, dated December 2015[3]). This report should be read in conjunction with the JK report.

1.1 Proposed Development Details

The concept plans for the proposed master plan issued to EIS are attached in the appendices. A review of the plans indicate that the development will include the following:

1.1.1 Site A: Sporting Facilities

The development in Site A will include:

- Construction of two soccer fields and associated amenities in the west section;
- Construction of two rugby fields and associated amenities in the central north section;
- Construction of four basketball fields and associated amenities in the north-west section; and
- Construction of hardstands, public roads, pedestrian walkways and landscaping.

Significant earthworks are anticipated for the proposed sporting facilities.

[1] Environmental consulting division of Jeffery & Katauskas Pty Ltd (J&K)

[2] Geotechnical consulting division of J&K

[3] Referred to as JK 2015 Report

1.1.2 Site B: Residential Complex

The development in Site B will include:

- Excavation to an maximum depth of about 4m below the existing grade for one level basement level basement carpark over the eastern and western half of Site B;
- Construction of twelve (12) multistorey senior living and residential aged care facilities (RACF) above the basement carpark. The proposed buildings range in height between three (3) and fourteen (14) stories;
- Construction of basement carpark link roads, public access roads, light vehicle and pedestrian external pavements and service roads; and
- Construction of a childcare facility to the north of the Site B development area.

Significant earthworks are anticipated for the proposed residential complex.

1.2 Objectives

The objectives of the study include:

- Assess the potential for site contamination;
- Assess the potential for soil salinity and requirement for a salinity management plan;
- Assess the potential risk the contamination may pose to the site receptors; and
- Comment on the suitability of the site for the proposed master plan development.

1.3 Scope of Work

The study was undertaken generally in accordance with the EIS proposals (Ref: EP9316KB.prop2, EP9316KB.prop3 and EP9316KB.prop4) and a consultancy services agreement CC-AA 10691 between Paynter Dixon Construction Pty Ltd and JK Group of 23 October 2015.

The scope of work included the following:

- Review of previous investigation reports prepared for the site;
- Review of site information including historical information available for the site;
- Undertake a site inspection to identify Areas of Environmental Concern (AEC);
- Preparation of a Preliminary Conceptual Site Model (CSM);
- Design and implementation of a sampling, analysis and quality plan (SAQP);
- Interpretation of the analytical results against the adopted Site Assessment Criteria (SAC);
- Data Quality Assessment (DQA);
- Undertake a Tier 1 Risk Assessment and review of CSM; and
- Preparation of a report presenting the results of the assessment.

The report was prepared with reference to regulations and guidelines outlined in the table below. Individual guidelines are also referenced within the text of the report.

Table 1-1: Guidelines and Regulations

Guidelines and Regulations
NSW Government Legislation (1997), *Contaminated Land Management Act 1997* [4]
NSW Government (1998), *State Environmental Planning Policy No. 55 – Remediation of Land* [5]
NSW Office of Environment and Heritage (OEH) (now EPA) (2011), *Guidelines for Consultants Reporting on Contaminated Sites* [6]
NSW EPA (1995), *Sampling Design Guidelines* [7]
NSW Department of Environment and Conservation (DEC) (now EPA) (2006), *Guidelines for the NSW Site Auditor Scheme (2nd edition)* [8]
NSW EPA (2015), *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997* [9]
National Environment Protection Council (NEPC) (2013), *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)* [10]
NSW Government/Landcom (2004) (4th Ed) (Blue Book 2004), *Managing Urban Stormwater – Soil and Construction*
Department of Land and Water Conservation (DLWC) (2002), *Site Investigations for Urban Salinity*
Standards Australia (2009) (AS2159-2009), *Piling – Design and Installation*
CCAA (2005) *T56: Guide to Residential Slabs and Footings in Saline Environments*

[4] referred to as CLM Act

[5] referred to as SEPP55

[6] referred to as Reporting Guidelines

[7] referred to as Sampling Design Guidelines

[8] referred to as Site Auditor Guidelines

[9] referred to as the Duty to Report Guidelines

[10] referred to as NEPM 2013

2 SITE INFORMATION

2.1 Background

2.1.1 Previous Investigation Reports

EIS were provided with the following investigation reports previously prepared for the site:

- Golder Associates (1997), *'Preliminary Site Contamination Assessment, Blacktown Workers Club, Reservoir Road, Blacktown',* prepared for Paynter Dixon (Aust) Pty Ltd*,* Ref: 97621082.B, June 1997;
- Johnstone Environmental (JET) (1998), *'Stage 1 Contamination Audit of Two Properties in Walters Road, Arndell Park for Blacktown Workers Club',* Ref: JET00747-001.AMA, May 1998;
- Douglas Partners (DP) (1999), '*Report on Soil Contamination Investigation, Walters Road, Arndell Park, Lot 200 DP880404, Lot 10 DP818679 and Lot 14 Section 4 DP818679',* prepared for Lovegrove Oxley & Associated Pty Ltd, Ref: 24192C, April 1999;
- Douglas Partners (DP) (2004), '*Supplementary Contamination Assessment, Blacktown Workers Club- Walters Road, Arndell Park'* prepared for Paynter Dixon, Ref: 37418, 8 September 2004; and
- Brink and Associates (2007), 'Paynter Dixon Constructions Pty Ltd, Proposed Commercial Development, Blacktown Workers Club, Walters Road, Arndell Park, Geotechnical Investigation Report'. Ref: S06160-A TV:MC, 1 February 2007.

JK and EIS have previously undertaken the following investigations at the site:

- JK (2013), *'Report to Paynter Dixon Constructions Pty Ltd on Geotechnical Investigation for Proposed Extensions to Blacktown Workers Sports Club at 170 Reservoir Road, Blacktown, NSW*'. Ref: 26564Vrpt-Blackton, 4 July 2013; and
- EIS (2013), '*Report to Paynter Dixon Constructions on Stage 1 Environmental Site Assessment and Preliminary Contamination Screening for Proposed Commercial Development at Blacktown Workers Sports Club, 166-170 Reservoir Road, Blacktown, NSW*'. Ref: E26564Krpt, 8 July 2013.

A brief summary of the above investigations is outlined below. Relevant information from the EIS 2013 report is included in this report.

2.1.2 Golder Associates 1997

The investigation was designed as a preliminary screening and included a limited site history study and subsurface investigation with soil sampling. A brief summary of the investigation results is outlined below:

- A review of the historical aerial photos indicated industrial development of the areas to the south of the site occurred from the 1970's;
- Samples for the contamination testing were obtained from a total of 21 boreholes drilled using hand equipment and drill rigs in selected areas of the site. A plan showing the sample locations is attached in the appendices;

- The boreholes were drilled to depths ranging from approximately 0.5m below ground level (bgl) to a maximum of 8.8mbgl;
- Selected soil samples obtained from the boreholes were analysed for the following contaminants of primary concern (CoPC): heavy metals (7); OCP's; TPH's; and pH;
- The boreholes generally encountered fill at all locations which consisted of silty clay of medium plasticity. Relatively deeper fill to a depth of approximately 2.5mbgl was encountered to the south of the bowling green;
- Shale was encountered at a depth of approximately 1.3m in the northern portion of the bowling greens and increased in depth to approximately 2.5m on the southern side;
- Groundwater was not encountered during the investigation;
- The highest PID value recorded was 2.0ppm;
- Traces of metals (mercury) and OCPs were encountered mainly in the fill soils. The pH of the soil ranged from 5.7 to 6.8; and
- The report concluded that the likelihood for ground contamination was low and the site was suitable for continued recreational use.

2.1.3 Johnstone Environmental 1998

Johnstone Environmental was commissioned to undertake a Stage 1 contamination study for the properties identified as Lot 14, Section 4 of DP6796 and DP818679. The study area was located on the eastern side of Walters Road with Bungarribee Creek intersecting through the site.

The study included a site history assessment and sampling of the sediments from selected locations at the creek as shown on the plan attached in the appendices. A summary of the results is presented below:

- DP818679:
  - The site had previously been used as a market garden;
  - At the time of the investigation, the site was occupied by a single storey brick house with a number of small, galvanised iron sheds located to the rear;
  - The site slopes gently to the east;
  - The 1951 aerial photo showed signs of cultivation around the house;
- DP6769 (larger lot with an area of approximately 5 hectares):
  - Lightly vegetated along the creek bank;
  - At the time of the investigation, the western portion of the site was occupied by the ruins of a small brick building which included an old vehicle;
  - There was also evidence of numerous concrete slabs under the grass in this section of the site;
  - A sewer line was identified on the lot;
  - A large volume of soil had been placed on the eastern portion of the lot to depths of approximately 2m to 2.5m. The inclusions in the fill included timber, concrete, plastic and other building wastes;
  - The 1951 aerial photo showed long narrow buildings at the lot;
- Sediment samples from the creek were tested for TRH, PAH, OCP and heavy metals.

2.1.4 Douglas Partners (DP) 1999 and 2004

DP was commissioned to undertake a soil contamination investigation in 1999 and a supplementary contamination assessment in 2004. The study in 1999 was confined to Lot 200 DP880404, Lot 10 DP818679 and Lot 14 Section 4 DP6796 which occupied an area of approximately 8.78 hectares. The 1999 study included a subsurface investigation as shown on the plans attached in the appendices. The 1999 study identified the following:

- The former land use included a poultry farm which was demolished;
- The subsurface conditions revealed fill at DP6796 and DP880404 which consisted of clay, ironstone and silt to depths of greater than 2.5m. Fill material was not observed on DP818679;
- Representative samples were obtained from the fill and natural soil;
- Samples were obtained on a grid pattern and analysed as composite samples. Three surface samples were combined to make up 1 composite sample;
- Selected composite samples were analysed for heavy metals, OCPs and OPPs;
- The laboratory analysis indicated marginal elevations of arsenic and nickel on DP880404 compared to the site assessment criteria adopted for the study;
- The study concluded that the site was suitable for ongoing land use. The report recommended additional investigation be undertaken in the event of change in land use to a more sensitive type.

The DP 2004 study was a desktop review of the 1999 information followed by a site inspection and review of anecdotal information. Subsurface investigation was not undertaken for the 2004 study. The study identified the following:

- The site investigation revealed that the main changes that had occurred to the site since 1999 included:
  - Demolition of poultry sheds;
  - Stockpiling of building rubble and demolition wastes on part of the site;
  - The amount of material stockpiled suggested that some material may have been brought onto the site. There were no records proving or disproving this;
- The report stated that contamination from asbestos materials was cause for concern;
- A club representative stated that asbestos cement sheeting had been located in the kitchen and laundry areas of the former residential building and was now buried beneath the stockpile on Lot 10 DP818679;
- A representative also stated that approximately 100m^3 of fill from an unknown source had been placed on the baseball field to raise ground level since the previous investigation in 1999;
- Additional use of uncontrolled fill material was evident;
- The report concluded that additional sampling was required to assess the suitability for use; and
- The report also stated that it may be necessary to remove the stockpile and fill material from the site.

2.1.5 Brink and Associates 2007

Brink and Associates were commissioned to undertake a geotechnical investigation for the construction of warehouses, driveways, hardstands and pedestrian walkways at the site. The investigation included drilling 17 boreholes at selected locations shown on the plans attached in the appendices. The boreholes encountered the following subsurface conditions:

- Fill – Ranged in depth from approximately 0.6mbgl to 2.2mbgl;
- Natural Soil – Alluvial silty clay was encountered in borehole BH116, the remaining boreholes encountered residual clay soil to depths of approximately 4.9mbgl to 9.8mbgl;
- Bedrock – Shale bedrock was encountered below the natural soils at selected locations; and
- Groundwater – Seepage was encountered in selected boreholes at depths of approximately 1.1mbgl to 8.3mbgl.

2.1.6 EIS Stage 1 ESA 2013

2.1.6.1 Introduction

Paynter Dixon Constructions commissioned EIS to undertake a Stage 1 Environmental Site Assessment (ESA) and Preliminary Contamination Screening (PCS) for the proposed commercial development at Blacktown Workers Sports Club in 2013.

The ESA was undertaken for the proposed extension to the existing main club building (located between the existing bowling greens and the main club building) and the demolition of existing buildings to the south of the bowling greens and replacement with a two-storey building.

At the time of the ESA, the site was occupied by a single-storey concrete block building used as the main clubhouse, a 3-storey concrete building used as a motel, a single-storey brick building used as change rooms, two bowling greens, sports fields, tennis courts, an asphaltic concrete and gravel driveway, and asphaltic concrete parking areas.

2.1.6.2 Summary of Site History and AEC

The site history information indicated that the site may have been used for agricultural or grazing purposes. The site appeared to have been used for sporting fields and club facilities since the 1970s. Areas of Environmental Concern (AEC) were identified to include: imported fill material; bowling green maintenance and agricultural activities that may have involved the use of pesticides; and previously-existing structures that may have contained asbestos-containing materials. Potential contaminants of concern were identified to include heavy metals, petroleum hydrocarbons, BTEX compounds, VOCs, PAHs, pesticides, PCBs and asbestos.

2.1.6.3 PCS

Soil samples for the PCS were collected from five (5) boreholes drilled in locations adjacent to the bowling greens and analysed for potential contaminants of concern. The sampling locations are shown on the figures attached in the appendices.

Fill material was encountered to depths of up to 1.6m in the majority of boreholes, underlain by natural silty clay soils and sandstone/shale bedrock. Soil analytical results were compared to Site Assessment Criteria (SAC) which were established with reference to appropriate guidelines and regulations.

Elevated concentrations of contaminants were not encountered in the soil samples analysed for the investigation. All analytical results were below the SAC.

2.1.6.4 Conclusion

Based on the results, the ESA concluded that the potential for significant widespread soil contamination in the development area was relatively low. The fill material analysed was considered to be suitable for re-use on-site provided it met geotechnical and earthwork requirements. Should the material be disposed off-site, the material was classified as General Solid Waste (non-putrescible).

A detailed assessment of the groundwater conditions was outside the scope of the Stage 1 ESA.

The ESA concluded that the site was suitable for the proposed commercial development provided that:

- A Hazardous Building Material survey of the existing structures is undertaken prior to demolition; and
- An Unexpected Finds Protocol (UFP) is prepared to manage any unexpected discoveries during earthworks (e.g. asbestos, cement fragments, odorous soil etc.).

2.2 Site Identification

The information presented below has been sources from various governmental and council databases. Copies of the relevant information is attached in the appendices.

Table 2-1: Site Identification

Current Site Owner:	Blacktown Workers Club Limited
Site Address:	Site A – 221 Walters Road, Arndell Park, NSW Site B – 170 Reservoir Road, Arndell Park, NSW
Lot & Deposited Plan:	Lots 200 and 201 in DP880404 Lot 14 in DP6796 Lots 14, 16 and 17 in DP809530 Lots 10 and 11 in DP818679
Current Land Use:	Commercial – Recreational
Proposed Land Use:	Sporting Facilities – Site A High Density Residential – Site B
Local Government Authority (LGA):	Blacktown Council
Current Zoning (Blacktown LEP 2015):	RE2 – Private Recreation IN2 – Light Industrial IN1 – General Industrial W1 – Natural Waterway SP2 – Infrastructure
Heritage Items:	None on site
Bushfire Prone Land:	The north section of the site along the site boundary falls in the category 'Vegetation Buffer'.
Ecological Constraints:	The west section of the site is occupied by Alluvial Woodland. The central-north section of the site is occupied by Shale Plains Woodland.
Area of Proposed Development (hectares):	Site A – 7 hectares Site B – 6 hectares
RL (AHD in m) (approx.):	64m in the north-east corner to 52m in the north-west corner
Geographical Location (MGA) (approx.):	Site A – N: 6258815 E: 304838 Site B – N: 6258552 E: 305177
Site Plans:	See Appendices

2.3 Site Location and Regional Setting

The wider site is located in a predominantly commercial/industrial area of Arndell Park as shown on Figure 1. The wider site is bounded by Reservoir Road to the east, by Walters Road to the west, Holbeche Road to the north and by Penny Place to the south. The Great Western Highway is located approximately 200m to the south of the site. Bungarribee Creek runs through the central-west section of the wider site.

2.4 Topography

The site is located in an undulating regional topographic setting which generally slopes from south-east to north-west. The site itself is undulating with a change in RL of 64m in the north-east to a RL of 52m in the north-west. Localised falls occur towards the central section of the site associated with the creek and its gullies. Significant historic filling has changed the natural site topography.

2.5 Site Inspection

A walkover inspection of the site was undertaken by EIS on 29 October 2015. The inspection was limited to accessible areas of the site and immediate surrounds. An internal inspection of buildings was not undertaken. Selected site photographs obtained during the inspection are attached in the appendices. A summary of the site description is provided below.

2.5.1.1 Site A

Site A is located over the western portion of the wider site. Site A is located within the undulating topography and spans across the northern and southern banks of a local gully feature and Bungarribee Creek. The creek line enters the site along the southern boundary and flows down towards the north-west. A narrow water course traverses the north-west corner of the site merging with the creek line at the western boundary. A stormwater culvert running beneath the site discharges into an open water course along the southern boundary. The water course merges with the Bungarribee Creek line. At the time of the inspection, there was gently flowing water in the creek and water course beds. Small to medium size trees lined the creek and water course.

The eastern end of Site A consists of an existing grass covered baseball playing field and upper and lower on-grade asphaltic concrete (AC) car parks. The upper (northern) and lower (southern) car parks were separated by a batter which sloped down to the south and was approximately 2m high and graded at approximately 21°.

Extending to the west from the baseball field was a grass covered fill knoll. The north, south and east banks of the knoll generally graded to the toe at up to 32° and were approximately 3m high. The creek line ran along the southern toe of the knoll.

The south-east portion of Site A comprised a grass covered slope which graded down to the north-east at approximately 3°- 4° towards Bungarribee Creek.

The northern portion of Site A, to the north of the creek line comprised, gently undulating grass covered terrain with scattered small to medium size trees. An area approximately 30m by 65m located at the northern toe of the knoll had recently been backfilled with material that was loosely placed.

To the north of Site A, located on the site boundary were three concrete block warehouse buildings with hardstand surrounding. The buildings and hardstand all appeared in good external condition when viewed from the subject site. The surface level across the boundary was essentially similar.

A neighbouring concrete panel warehouse with concrete paved surrounds was set-back approximately 15m from the western end of the southern site boundary. A concrete block 'keystone' wall (maximum height of approximately 6.5m) lined the southern site boundary and supported the neighbouring paved surface levels.

The neighbouring property located at the eastern end of the southern site boundary was occupied by two concrete panel warehouse buildings located on the site boundary.

2.5.1.2 Site B

Site B is located on the eastern section of the wider site. Site B is located within undulating topography over the eastern bank of a local shallow gully feature which runs north-south and north-west. The eastern bank sloped at approximately 1° to 2°. The site is bound by Reservoir Road and Penny Place to the east and west, respectively.

At the time of the inspection, the site had been formed into two grass covered, terraced playing fields with an elevation variance of approximately 1.5m between the upper (eastern) and lower (western) field. A grass covered embankment slopping at approximately 27° to the west was supporting the upper (eastern) field. The two playing fields had been formed by cut and fill with the south eastern corner of the upper field in cut and remainder of the upper and lower fields backfilled to raise surface levels.

A sandstone block retaining wall of approximately 1m high was located along the majority of the eastern boundary which supported the neighbouring council footpath and Reservoir Road. The south eastern corner of Site B graded up to the east at approximately 9° to meet the neighbouring surface levels. The remaining portion of the southern boundary had been battered up to the edge of the fields from the boundary. The southern batter was up to approximately 2m high and sloping at approximately 27°. A fill batter up to approximately 2m high and sloping at approximately 32° graded down from the edge of the lower playing field to the site boundary. An asphaltic concrete (AC) carpark and access ramps were located along the northern edge of the lower field. The carpark and lower field were at a similar surface level. Along the northern edge of the playing fields and the adjacent AC

carpark a batter slope graded down to an internal access road and lower level AC carpark. The northern batter was up to about 1.5m high and was sloping at approximately 20°.

A stormwater inlet pit was located centrally along the eastern end of the upper field. The stormwater pipe appeared to connect to a culvert outlet located towards the north-western corner of Site B. The stormwater outlet discharged into an open creek which was running to the west. The alignment of the stormwater pipe between the inlet and outlet was not assessed.

To the west of Site B located on the common site boundary were two single storey concrete panel warehouse building. The buildings appeared in good external condition when viewed from within the subject site. The ground surface levels across the boundary were essentially similar.

2.6 Surrounding Land Use

The immediate surrounds included the following landuse:

2.6.1.1 Site A

- North – Commercial warehouses;
- South – Commercial warehouses;
- East – Existing baseball fields and club house beyond;
- West – Walters Road and commercial landuse beyond.

2.6.1.2 Site B

- North – Existing club hose, car park and associated facilities;
- South – Penny Place and commercial beyond. A 7 Eleven service station was located to the south-east of the site;
- East – Reservoir Road and residences beyond; and
- West – Commercial warehouses.

2.7 Underground Services

The 'Dial Before You Dig' (DBYD) plans were reviewed for the study. Copies of the relevant plans are attached in the appendices. A brief summary of the relevant information is present below:

Table 2-2: Summary of Relevant Services

Service	Location	Potential Migratory Pathway
Telecom	The plan indicates that telecommunication services enter the north-east section of the wider site from Reservoir Road.	These services are not considered to be a potential migratory pathway.
Electrical	The plans indicate that an electrical services enter the north-east section of the wider site from Reservoir Road.	These services are not considered to be a potential migratory pathway.

2.8 Regional Geology

A review of the regional geological map of Penrith (1991[11]) indicates that the wider site is underlain by Bringelly Shale of the Wianamatta Group, which typically consists of shale, carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff.

2.9 Soil Landscape and Dryland Salinity

2.9.1 Soil Landscape

The majority of the wider site is located within the Blacktown soil landscape which is derived from residual processes. The north-west corner of Site B is located on the boundary of the Blacktown soil and South Creek soil landscape which are alluvial.

Blacktown soils are characterised by moderate erodibility with some higher local occurrences, low dispersivity and localised areas of moderate salinity. South Creek soils are characterised by high to severe and widespread erodibility, moderate dispersivity and high salinity.

2.9.2 Dryland Salinity Hazard

The wider site is located in an area classed as having a 'High Hazard or Risk' of dryland salinity. Areas of high risk occur where soil, geology, topography and groundwater conditions predispose a site to salinity. These areas most commonly occur on lower slopes and drainage systems where water accumulation is high. These areas are most likely to occur in lower slopes, foot slopes, floodplains and creek lines where run-off is high, resulting in seasonally high water tables and soil saturation.

[11] Department of Mineral Resources, (1991), *1:100,000 Geological Map of Penrith (Series 9030).*

2.10 Acid Sulfate Soil (ASS) Risk

The site is not located in an ASS risk area.

2.11 Hydrogeology

A review of groundwater bore records available on the NSW Government Water Information[12] database was undertaken for the assessment. The search was limited to registered bores located within a radius of approximately 1Km of the wider site.

The search indicated six (6) bores within the search area registered for monitoring purposes. A cluster of three (3) boreholes were located at the service station to the immediate south-east of the wider site. These bores are not registered for beneficial use and hence not considered to be potential receptors. Copies of the records are attached in the appendices.

A review of the regional geology and groundwater bore information indicates that the subsurface condition at the wider site is expected to consist of residual soils overlying relatively shallow bedrock. The occurrence of groundwater that could be utilised as a resource for beneficial use is considered to be relatively low under such conditions. A perched aquifer in the subsurface may be present.

2.12 Receiving Water Bodies

The wider site location and regional topography indicates that excess surface water flows have the potential to enter Bungarribee Creek which runs through the central section of the wider site from the north-west. Surface water run-off could also reach the manmade dam located in the north section of the wider site. Both of these water bodies are potential receptors.

[12] http://www.waterinfo.nsw.gov.au/gw/

3 SITE HISTORY INFORMATION

3.1 Review of Historical Aerial Photographs

Historical aerial photographs available for the site and immediate surrounds were reviewed for the study. Copies of the photographs are attached in the appendices. A summary of the relevant information is presented in the table below. The description below is for the wider site which includes Site A and Site B.

Table 3-1: Summary of Historical Aerial Photos

Year	Details
1930	The photograph was of poor quality. The site appeared to form part of a wider lot. The majority of the site was vacant and appeared to be covered with grass/weeds. Dense vegetation was located in the north, east and south sections of the site. A small residential type dwelling and a few sheds were located on the west section of the site. The area to the immediate north of the dwelling appeared to have been disturbed with exposed soil and a few small stockpiles. A small gully feature was located in the north-west section of the site. A few small buildings and exposed soil was located near the north-east site boundary. The immediate surrounds generally appeared to be either rural or bushland. Dense vegetation was located to the immediate north, south and east of the site. A few small dwellings were located further to the south of the site.
1943	Large sections of the site had been developed. A large poultry farm was located on the north-east section of the site with frontage onto Reservoir Road. Numerous small sheds and poultry pens were scattered across this section of the site. The area to the immediate south of the farm was vacant. A small creek/gully feature was located in the central section of this area. The central section of the site was vacant and grassed. The west section of the site appeared to be occupied by a separate rural property with signs of cultivation and numerous small sheds visible in some sections. The north-east and east sections of the site appeared to be bushland. The remaining surrounds appeared to be rural.
1956	The site generally appeared similar to the 1943 photograph. Ponding water was located in the central and east sections of the site along the creek which indicated signs of potential flooding in low lying sections of the site. Two manmade dams were visible one in the central section and the other on the east site boundary. The west section of the site had been extensively cultivated. The bushland to the north and east had been cleared and dirt tracks were visible for the development of new roads.
1961	The site and immediate surrounds generally appeared similar to the 1956 photograph. Relatively long sheds were located in the north-west section of the site.

Year	Details
1970	The poultry farm on the north-east section of the site had been cleared. Significant earthworks was underway in the north-east and east sections of the site. What appeared to be ovals/playgrounds were being created in the south-east section of the site. A large building was located in the central part of the east section. The west section of the site appeared similar to the 1961 photograph. The immediate surrounds generally appeared similar to the 1961 photograph. There was an increase in the number of rural properties to the east of Reservoir Road.
1982	The east section of the site had been developed into a recreational facility with numerous playing fields, four tennis courts, lawn bowling fields, hard stand areas and associated buildings. Six large buildings which appeared to be associated with the club were located in the central and east sections of the site. A paved access driveway ran from Reservoir Road to the main building complex. A large manmade dam was located on the north site boundary. Some signs of filling was evident in the central section of the site. The west section of the site appeared similar to the 1970 photograph. The immediate surrounds appeared similar to the 1970 photograph.
1991	The site and immediate surrounds generally appeared similar to the 1982 photograph. A large residential subdivision was located to the south-east of the site. A large warehouse was located to the west of the site.
2004	New buildings similar to the present layout were located in the east section of the site. A large hardstand area was located near the east and north-east site boundaries. Five tennis courts and a baseball court was located in the north section of the site. A small shed was located next to the large dam on the north site boundary. The central section of the site appeared to have been filled with a section of the creek located along the south boundary. The south-east section of the site was occupied by two large cricket fields. The west section of the site appeared to be vacant. The former rural landuse in the west appeared to have ceased. A small dam located in the south-west section of the site appeared to have been partially filled. The area to the north, south and west of the site was occupied by large warehouses. A new road was located along the north site boundary. A service station was located to the south-west of the site.
2009	The site generally appeared similar to the present layout. A large multi-level car park was located on the east section of the site. Hardstand areas were located to the north of the car park. A restaurant building was located on the north-east corner of the site. Numerous small sheds had been created around the playing fields. The central and west sections of the site appeared to be vacant.
2014	The site and immediate surrounds generally appeared similar to the present layout.

3.2 Review of Land Title Records

Land title records were reviewed for the study. The record search was undertaken by Advance Legal Searchers Pty Ltd. Copies of the title records are attached in the appendices.

The title records indicate the following:

- Sections of the wider site was owned by N.S.W Realty Co. Limited between 1913 to 1918;
- Numerous private individuals owned the wider site between 1918 and 1978;
- Belmore Smallgoods Pty Ltd owned Lot 14 between 1973 and 1977;
- Sections of the wider site was owned by poultry farmers between 1928 and 1973;
- Blacktown Workers Club Limited has owned the site since 1978. The site has been leased to Travelodge Developments Pty Ltd (now Trust Company Limited), Value Lodging Pty Ltd, and McDonalds Australia Limited.

3.3 Review of Blacktown Council Information

A search of council records is currently underway. The results will be summarised in a separate letter when received.

3.4 WorkCover Records

A review of WorkCover records for the wider site is currently underway. The results will be summarised in a separate letter when received.

3.5 NSW EPA Records

The NSW EPA records available online were reviewed for the study. Copies of relevant documents are attached in the appendices. A summary of the relevant information is provided in the following table:

Table 3-2: Summary of NSW EPA Online Records

Source	Details
CLM Act 1997[13]	There were no notices for the wider site under Section 58 of the Act. A search of the records indicated a former listing for Reservoir Road located to the immediate east of the site. The records indicate that the EPA has completed an assessment of the contamination and decided that regulation is not required under the CLM Act.

[13] http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx

Source	Details
NSW EPA List of Contaminated Sites[14]	The wider site is not listed on the NSW EPA register.
POEO Register[15]	The POEO register indicates three former licenses (4653, 4838 and 6630) relating to the application of herbicides in the waterways by Luhrmann Environment Management Pty Ltd, Robert Orchard and Sydney Weed & Pest Management Pty Ltd. The waterways included Bungarribee Creek located in the central section of the site.

3.6 Historical Business Directories

A review of the 1950, 1970 and 1991 historical business directory records available with UBD Business Directory was undertaken for the assessment. Copies of the records are attached in the appendices. The records indicated the following:

- 1950 Directory – The north-east section of the wider site was occupied by poultry farmers operated by Brown C. This information is consistent with the historical aerial photos. A motor accessories dealership operated by Harper G. W. was located adjacent to the east site boundary on Reservoir Road. No drycleaners were located within 2km of the site;
- 1970 Directory – No records within the buffer area. No drycleaners were located within 2km of the site; and
- 1991 Directory – Motor body builders operated by Maxi Cube Fruehauf was located approximately 100m to the west of the site. The business also manufactured and distributed semi-trailer and associated equipment.

3.7 Summary of Site History Information

A summary of the historical land uses is presented in the table below. The land uses and time periods listed in the table are based on a weight of evidence assessment of the site history documentation and observations made during the site inspection.

[14] http://www.epa.nsw.gov.au/clm/publiclist.htm

[15] http://www.epa.nsw.gov.au/prpoeoapp/

Table 3-3: Summary of Historical Land Uses

Year(s)	Potential Land Use	Supporting Evidence
1930 to prior 1943	Rural / vacant	The 1930 aerial photograph indicates that the site was rural land with large sections occupied by bushland. A few dwellings were located on the wider site.
1943 to prior 1970	Rural / Poultry	The site history information indicates that a large poultry farm was located on the north-east section of the wider site. The west section of the wider site was occupied by individual rural properties.
1970 to Present	Recreational / Club House	The site history information indicates that the wider site was progressively developed for recreational landuse. Significant earthworks was underway in the 1970s to facilitate the new development. The sporting facilities were constructed between 1970 and 1991. New buildings were constructed between 1991 and 2004.

3.8 Integrity of Site History Information

The majority of the site history information has been obtained from government organisations as outlined above. The veracity of the information from these sources is considered to be relatively high.

A certain degree of information loss can be expected given the age of the development; gap between aerial photographs; and lack of detailed information prior to the 1900's.

4 CONCEPTUAL SITE MODEL (CSM)

The CSM is based on a review of the site information outlined previously in this report. The Areas of Environmental Concern (AEC) identified in the CSM can either be a point source of contamination or widespread area/s impacted by current or historical activities. The CSM should be reviewed and updated when more information becomes available for the site.

Table 4-1: CSM

AEC / Extent	CoPC	Potential Exposure Pathway and Media	Potential Receptors
Fill Material – Entire Site The site has been historically filled to achieve the existing levels. The Stage 1 ESA encountered fill ranging in depth from 0.3m to 5.8mbgl. Deep fill was encountered in the central and east sections of the site. The DP 2004 report indicated that fill had been brought onto the site for unknown sources. The fill may have been imported from various sources and can contain elevated concentrations of contaminants.	Heavy metals, TRH, BTEXN, PAHs, OCPs, OPPs, PCB, and asbestos	Direct Contact – dermal contact; ingestion; and inhalation of dust, vapours and fibres. Media - soil, groundwater and vapour.	Human Receptors – Site occupants; visitors; development and maintenance workers; and off-site occupants. Environmental Receptors – Flora and fauna at the site and immediate surrounds; Alluvial Woodland; Shale Plains Woodland located at the site; Bungarribee Creek.
Poultry Farm and Rural Landuse – Point Source The site has been used for poultry and rural landuse. Numerous sheds containing hazardous building materials were demolished during this period. Chemicals such as pesticides could have been used at the site. Rubbish could have been buried at the site.	Heavy metals, TRH, BTEXN, PAHs, OCPs, OPPs, PCB, and asbestos	Direct Contact – dermal contact; ingestion; and inhalation of dust, vapours and fibres. Media - soil, groundwater and vapour	Human Receptors – As Above Environmental Receptors – As Above

AEC / Extent	CoPC	Potential Exposure Pathway and Media	Potential Receptors
Use of Herbicides – Waterways The EPA POEO records indicate that herbicides have been used in the waterways which includes Bungarribee Creek. The herbicides could have impacted the sediment and soil along the creek.	Herbicides	Direct Contact – dermal contact; and ingestion. Media – soil and groundwater.	Human Receptors – As Above Environmental Receptors – As Above
Hazardous Building Material – Filled Areas The aerial photographs indicate that former buildings at the site were demolished prior to 1980s. The use of hazardous building material in the former buildings could have resulted in potential contamination. The DP 2004 report identified asbestos in fill as a cause of concern.	Asbestos, lead and PCBs	Direct Contact – dermal contact; ingestion; and inhalation of dust and fibres. Media – soil and air.	Human Receptors – As Above Environmental Receptors – As Above
Dryland Salinity - Regional Issue The site is located in an area classed as having a 'High Hazard or Risk' of dryland salinity. Dryland salinity can have an impact on the landscaping and built structures.	EC, pH, CEC, Resistivity, SO4 and Cl	The risk is to landscaping and built structures.	Environmental Receptors – Potential impacts of local flora. Built Structures – Potential impacts on concrete, steel and brickwork in contact with the ground.

5 SAMPLING, ANALYSIS AND QUALITY PLAN

5.1 Data Quality Objectives (DQO)

The NEPM 2013 defines the DQO process as a seven step iterative planning tool used to define the type, quantity and quality of data needed to inform decisions relating to the environmental condition of the site. The DQO process applicable to this assessment is summarised below.

The DQO process is detailed in the US EPA document *Guidance on systematic planning using the data quality process (2006[16])* and the NSW DEC document *The Guidelines for the NSW Site Auditor Scheme, 2nd Edition (2006[17])*.

5.1.1 State the Problem

The CSM has identified AEC at the site which may pose a risk to the site receptors. An intrusive investigation is required to assess the risk and comment on the suitability of the site for the proposed development or intended landuse.

The assessment also aims to meet the requirements of SEPP55 in order to address the council Development Application (DA) process.

The EIS project team will include: project principal (PP) and/or project associate (PA); project engineer/scientist (PE); and field engineer/scientist (FE) as outlined in the quality recorded checklist maintained for the project in accordance with our ISO 9001 certification.

5.1.2 Identify the Decisions/ Goal of the Study

The data collection is project specific and has been designed based on the following:

- Review of site information;
- Review of the CSM;
- Development of Site Assessment Criteria (SAC) for each media; and
- Data interpretation based on the following decision statements:
  1) No single value exceeds 250% of the SAC;
  2) Statistical analysis will be used to assess the laboratory data against the SAC when there are results above the SAC. The following criteria will be adopted:
     - The 95% Upper Confidence Limit (UCL) value of the arithmetic mean concentration of each contaminant should be less than the SAC; and
     - The standard deviation (SD) of the results must be less than 50% of the SAC.
  3) Statistical calculations will not be undertaken if all results are below the SAC; and

[16] US EPA, (2006), *Guidance on Systematic Planning using the Data Quality Objectives Process.* (referred to as US EPA 2006)

[17] NSW DEC, (2006), *Guidelines for the NSW Site Auditor Scheme, 2nd ed.* (referred to as Site Auditor Guidelines 2006)

4) Statistical calculations will not be undertaken on the following:
   - Health Screening Levels (HSLs) – elevated point source contamination associated with petroleum hydrocarbons can pose a vapour risk to receptors;
   - Groundwater Investigation Levels (GILs) – elevated GILs can indicate a wider groundwater contamination risk; and
   - Soil vapour results – elevated results can pose a vapour risk.

5.1.3 Identify Information Inputs

The following information will be collected:

- Soil samples based on subsurface conditions;
- Potential Asbestos Containing Material (ACM) encountered during the inspection;
- The SAC will be designed based on the criteria outlined in NEPM 2013. Other criteria will be used as required and detailed in this report;
- The samples will be analysed in accordance with the analytical methods outlined in NEPM 2013;
- Field screening information (i.e. PID data, presence of hydrocarbons etc.) and observations made during the field investigation will be taken into consideration in selecting the analytical schedule; and
- Any additional information that may arise during the field work will also be used as data inputs.

5.1.4 Define the Study Boundary

The sampling was confined to the proposed development areas (Site A and Site B) as shown in Figure 2.

Fill has been identified as an AEC. The source of fill has not been established. Fill is considered to be heterogeneous material with CoPC occurring in random pockets or layers. The presence of CoPC in between sampling points cannot be measured.

5.1.5 Develop the analytical approach (or decision rule)

The following acceptable limits will be adopted for the data quality assessment:

- The following acceptance criteria will be used to assess the RPD results:
  - results > 10 times the practical quantitation limit (PQL), RPDs < 50% are acceptable;
  - results between 5 and 10 times PQL, RPDs < 75% are acceptable;
  - results < 5 times PQL, RPDs < 100% are acceptable; and
  - An explanation is provided if RPD results are outside the acceptance criteria.
- Acceptable concentrations in Trip Spike (TS), Trip Blanks (TB) and Field Rinsate (FR) samples as applicable. Non-compliance to be documented in the report; and
- Review of the QA/QC results reported in the laboratory reports. Non-compliance to be documented.

5.1.6 Specify the performance or acceptance criteria

NEPM 2013 defines decision errors as '*incorrect decisions caused by using data which is not representative of site conditions'*. This can arise from errors during sampling or analytical testing. A combination of these errors is referred to as '*total study error'*. The study error can be managed through the correct choice of sample design and measurement.

Decision errors can be controlled through the use of hypothesis testing. The test can be used to show either that the baseline condition is false or that there is insufficient evidence to indicate that the baseline condition is false.

The null hypothesis is an assumption that is assumed to be true in the absence of contrary evidence. In this case, for example, the CoPC identified in the CSM is considered to pose a risk to receptors unless proven not to. The null hypothesis has been adopted for this assessment.

5.1.7 Optimise the design for obtaining data

The most resource-effective design will be used in an optimum manner to achieve the assessment objectives.

5.2 Soil Sampling Plan and Methodology

5.2.1 Sampling Density

The NSW EPA Sampling Design Guidelines recommend a sampling density based on the size of the investigation/site area. The guideline provides a minimum number of sampling points required for the investigation on a systematic sampling pattern.

The guidelines recommend sampling from a minimum of 143 evenly spaced sampling points for the development area of approximately 13 hectares.

Samples for the Stage 1 ESA were obtained from 29 sampling points as shown on the attached Figure 2. This density is approximately 20% of the minimum sampling density recommended by the EPA.

5.2.2 Sampling Plan

The sampling locations were placed on a judgement plan to obtain a preliminary understanding of the subsurface conditions and to identify the depth of fill for design of a more detailed targeted assessment.

5.2.3 Sampling Equipment

Soil samples were obtained between 2nd and 6th November 2015. Sampling locations were set out using a hand held GPS unit (with an accuracy of ±5m). In-situ sampling locations were cleared for underground services by an external contractor prior to sampling.

The samples were obtained using the following equipment as shown on the logs attached in the appendices:

- Hydraulically operated drill rig equipped with spiral flight augers. Soil samples were obtained from a Standard Penetration Test (SPT) sampler or directly from the auger when conditions did not allow use of the SPT sampler; and
- Backhoe/excavator bucket. Samples were obtained directly from the bucket using hand equipment (i.e. trowel, rake).

5.2.4 Sampling Collection and Field QA/QC

Soil samples were collected from the fill and natural profiles based on field observations. The sampling depths are shown on the logs attached in the appendices.

Additional samples were obtained when relatively deep fill (>0.5m) was encountered. Samples were also obtained when there was a distinct change in lithology or based on the observations made during the investigation.

During sampling, soil at selected depths was split into primary and duplicate samples for field QA/QC analysis.

Samples were placed in glass jars with plastic caps and Teflon seals with minimal headspace. Samples for asbestos analysis were placed in zip-lock plastic bags.

Sampling personnel used disposable nitrile gloves during sampling activities. The samples were labelled with the job number, sampling location, sampling depth and date in accordance with the SSP.

5.2.5 Field PID Screening for VOCs

A portable Photoionisation Detector (PID) was used to screen the samples for the presence of VOCs and to assist with selection of samples for hydrocarbon analysis.

The sensitivity of the PID is dependent on the organic compound and varies for different mixtures of hydrocarbons. Some compounds give relatively high readings and some can be undetectable even though present in identical concentrations. The portable PID is best used semi-quantitatively to compare samples contaminated by the same hydrocarbon source.

The PID is calibrated before use by measurement of an isobutylene standard gas. All the PID measurements are quoted as parts per million (ppm) isobutylene equivalents. PID calibration records are attached in the appendices.

PID screening for VOCs was undertaken on soil samples using the soil sample headspace method. PID data was obtained from partly filled zip-lock plastic bags following equilibration of the headspace gases.

5.2.6 Decontamination and Sample Preservation

Where applicable, the sampling equipment was decontaminated using a scrubbing brush and potable water and Decon 90 solution (phosphate free detergent) followed by rinsing with potable water. Rinsate samples were obtained during the decontamination process as part of the field QA/QC.

Samples were preserved by immediate storage in an insulated sample container with ice or chill packs. On completion of the fieldwork, the samples were delivered in the insulated sample container to a NATA registered laboratory for analysis under standard COC procedures.

5.3 Analytical Schedule

The analytical schedule is outlined in the following table:

Table 5-1: Analytical Schedule

CoPC	Fill Samples	Natural Samples	Fibre Cement Fragments (FCF)
Heavy Metals	63	Na	Na
TRH/BTEXN	63	Na	Na
PAHs	63	Na	Na
OCPs/OPPs	32	Na	Na
PCBs	32	Na	Na
Asbestos	29	Na	2
pH	29	31	Na
EC	29	31	Na
Resistivity	29	31	Na

CoPC	Fill Samples	Natural Samples	Fibre Cement Fragments (FCF)
SO4	29	31	Na
Cl	29	31	Na
CEC	7	22	Na

5.3.1 Laboratory Analysis

The samples were analysed by the NATA Accredited laboratory/s using the analytical methods detailed in Schedule B(3) of NEPM 2013 and other standards. Reference should be made to the laboratory report/s attached in the appendices for further details.

Table 5-2: Laboratory Details

Samples	Laboratory	Report Reference
All primary samples and field QA/QC samples including (intra-laboratory duplicates, trip blanks and field rinsate samples)	Envirolab Services Pty Ltd NSW, NATA Accreditation Number – 2901 (ISO/IEC 17025 compliance)	137123
All salinity soil samples	SGS Alexandria Environmental NSW NATA Accreditation Number – 2562(4354) (ISO/IEC 17025 compliance)	SE145929

6 SITE ASSESSMENT CRITERIA (SAC)

The SAC adopted for the study has been derived from NEPM 2013 and other guidelines outlined in this report. The guideline values for individual contaminants are presented in the laboratory summary tables attached in the appendices.

6.1 Soil Contamination Assessment Criteria

6.1.1 Health Investigation Levels (HILs) – NEPM 2013

The following HILs criteria have been adopted for this assessment based on the proposed landuse:

- Proposed Childcare centre: HIL-A – Residential with accessible soils;
- Site A: HIL-C – Parks and recreational open spaces; and
- Site B: HIL-B – Residential with minimum opportunity for soil access.

6.1.2 Health Screening Levels (HSLs) – NEPM 2013

The HSL-A criteria for 'residential with accessible soil' have been adopted for this assessment.

6.1.3 Ecological Assessment Criteria (EAC) - NEPM 2013

The following EAC criteria have been adopted for this assessment based on the proposed landuse and ecological receptors at the site:

- Site A: Areas of Ecological Significance (AES) have been adopted; and
- Site B: Urban residential and public open space (URPOS).

The EILs for selected metals have been derived as follows:

- The ABC values for high traffic (25th percentiles) areas for old suburbs of NSW published in Olszowy et. al. (1995[18]) have been adopted for this assessment; and
- Selected samples obtained from the surficial profile (<2m) across the site were analysed for pH and CEC as part of the salinity study. The average pH and CEC values were used to calculate the ACL.

6.1.4 Asbestos in Soil

The 'presence/absence' of asbestos in soil has been adopted as the assessment criterion.

[18] Olszowy, H., Torr, P., and Imray, P., (1995), *Trace Element Concentrations in Soils from Rural and Urban Areas of Australia. Contaminated Sites Monograph Series No. 4*. Department of Human Services and Health, Environment Protection Agency, and South Australian Health Commission.

6.1.5 Waste Classification (WC) Criteria

The criteria outlined in the NSW EPA Waste Classification Guidelines - Part 1: Classifying Waste (2014[19]) has been adopted to classify the material for off-site disposal.

6.2 Soil Salinity Assessment Criteria

6.2.1 Background Information to Dryland Salinity

Salinity is the accumulation and concentration of salt at or near the ground surface or within surface water bodies. Salt is naturally present in the landscape through deposition of salt from the ocean in coastal areas and through weathering of bedrock that contains salt, accumulated during deposition of original sediments in a prehistoric marine environment. The salts are commonly soluble chlorides, sulphates or carbonates of sodium and magnesium.

In Sydney, salinity issues are typically associated with the Wianamatta Group shales and their derived soil landscapes. The natural vegetation of western Sydney is dominated by large isolated trees with deep root systems that remove subsurface moisture. Slow rates of percolation through the relatively impermeable clay soil and uptake of a large proportion of rainfall by the trees results in limited recharge of the groundwater system by rainfall. The depth to groundwater has developed a natural equilibrium and there is little tendency for salt contained in the groundwater or subsoils to rise to the surface.

6.2.2 Salinity and Urban Development

Salinity becomes a problem in urban areas when changes in the land use result in changes to the way water moves through the environment. This can result in vegetation die-back, decrease in water quality and damage to urban infrastructure.

Removal of deep rooted tree species during development and replacement with urban infrastructure, houses and industrial developments reduces the mechanism for the removal of subsurface moisture.

The development of urban salinity is commonly associated with changes in the hydrological cycle through the environment (rainfall, surface run-off, water infiltration and groundwater system). An increase in the quantity of water reaching the groundwater table as a result of vegetation clearance, irrigation of parklands, leaking water infrastructure and changes in drainage patterns, can cause a relatively rapid rise in the groundwater table. Earthworks that include excavation of natural soil profiles and exposure of more saline subsurface soils or shale bedrock may also result in an increase in salt concentrations at the ground surface.

[19] NSW EPA, (2014), *Waste Classification Guidelines, Part 1: Classifying Waste.* (referred to as Waste Classification Guidelines 2014)

Construction of roads, pipelines and buildings commonly results in removal of topsoil leading to exposure of the subsoils and interception of surficial and shallow subsurface drainage. In addition, over-irrigation of urban gardens, leaking water infrastructure and concentrated drainage patterns can result in increased water movement through the subsoil to the groundwater system leading to a relatively rapid rise in the groundwater table.

A rise in groundwater levels and impediments to subsurface drainage patterns can transport salt formerly stored in the bedrock to the surficial soil profile. This may result in salt encrustation of exposed soils, building foundations, roads, drainage infrastructure and corrosion of metal, concrete and other building materials. Increasing salt concentrations in surficial soils (and consequently in surface waters) may also result in die-off of the existing vegetation, further reducing the hydrological load on the groundwater system and resulting in further groundwater table rises.

6.2.3 Potential Salinity Impacts on Urban Development

Some of the adverse impacts that can arise from saline conditions include:

- Salt scalds caused by a rise in the subsoil moisture content that mobilises salt to the ground surface;
- Salt scalds caused by modification of former drainage patterns which leads to the day lighting of subsurface seepage (either perched water or groundwater) in areas lower in the catchment, either at breaks in the slope or within drainage lines;
- A rise in groundwater table or accumulation of salt rich seepage leading to corrosion of subsurface facilities including concrete structures, metal pipework, cables, foundations, underground services, etc.;
- Rising damp, where salt rich moisture is drawn into building and pavement materials by capillary action leading to deterioration of brick, mortar and concrete;
- Structural cracking, damage or building collapse which may occur as a result of shifting and or sinking foundations;
- Plant die-back associated with a rise in groundwater table level that mobilises excess salt to the plant root zone; and
- Subsurface water discharge and subsequent pollution of streams and drainage channels.

6.2.4 Soils and Groundwater Planning Strategy in Western Sydney

The aim of the DLWC 2002 document is to provide a framework for the sustainable development and management of new developments in the western region of Sydney. In relation to salinity management, the development should be designed and constructed such that there is no significant increase in the water table level and no adverse salinity impacts.

The proposed development controls that relate to soils and groundwater issues are summarised below:

1. A water management strategy should be prepared to address the following:
    - Reduction of potable water usage onsite;
    - Development of best practice measures for stormwater reuse for open space irrigation;
    - Reduction of potable water demand;
    - Reduction of adverse impacts on local groundwater regimes;
    - Reduction of change in local flow regimes; and
    - Preparation of water maintenance and a monitoring management system.
2. A salinity management plan should be prepared that includes a groundwater management strategy related to:
    - Adoption of small landscaped areas to reduce irrigation requirements;
    - Use of native and other low water requirement plants;
    - Use of mulch cover (not in drainage lines);
    - Use of low flow watering facilities for landscaped areas;
    - Implementation of a tree planting program, especially in high recharge areas, of native, deep rooted, large growing species to assist retention of the groundwater at existing levels;
    - Retention of existing native tree cover where possible; and
    - Not permitting infiltration pits or tanks to disperse surface water.
3. An assessment of soil and rock conditions at the site, including erosion, expansive and dispersive soil conditions, and plant growth potential should be undertaken; and
4. Use of the Blue Book 2004 as a guide to prepare soil and water management plans. The approved plan and subsequent works are to be supervised by appropriately qualified experienced personnel.

6.2.5 Background to Salinity Criteria Development

The Salinity Potential Map 2002 provides local government and state agencies with information to develop a salinity management response. The map indicates the distribution and potential severity of salinity at a 1:100,000 scale based on the current understanding of the factors that may lead to the development of saline conditions.

Western Sydney Salinity Code of Practice 2004 document was developed by the Regional Organisation of Councils Ltd (WSROC) in conjunction with DIPNR (now EPA) as a management tool to assist individual councils to develop policy to address salinity at the local government level.

Government departments (now under EPA) have also released a series of documents under the Local Government Salinity Initiative providing information on salinity in urban areas. This series includes the DLWC 2002 document which provides a frame work for undertaking salinity investigations for urban development.

Salinity management recommendations outlined in this report have been designed generally in accordance with the amended Salinity Code of Practice 2004. The recommendations have been designed with reference to various levels of salinity management response outlined in the publication.

6.2.6 Salinity and Plant Growth

The electrical conductivity (EC) of a 1:5 soil:water extract is commonly used as an indicator of soil salinity conditions as the reading is directly related to the electrolyte (salt) concentration of the extract. In order to compare the laboratory data with published salinity classes, the results are converted to equivalent saturated paste (ECe) using texture adjustment values presented in DLWC 2002.

The following table provides a summary of plant response with reference to salinity:

Table 6-1: Plant Response to Soil Salinity

ECe (dS/m)	Salinity Class	Plant Response[1]
<2	Non-saline	Salinity effects mostly negligible
2-4	Slightly saline	Yields of very sensitive crops may be affected
4-8	Moderately saline	Yield of many crops affected
8-16	Very saline	Only tolerant crops yield satisfactorily
>16	Highly saline	Only a few very tolerant crops yield satisfactorily

Note:

1 - Plant Response to Salinity Class has been adopted from DLWC 2002

6.2.7 Soil pH and Plant Growth

Soil pH is a measure of the acidity or alkalinity of the soils and values have been assessed as an indicator of soil fertility with respect to plant growth.

The optimal pH for plant growth is between 5.5 and 7. Beyond this range, effective revegetation of exposed soil following disturbance is increasingly difficult and the potential for erosion is considered to increase. Highly alkaline soils are commonly associated with saline and sodic soil conditions and can limit the ability of plants to take up water and nutrients. Highly acidic soils exhibit aluminium toxicity toward plants and can limit the ability of plants to take up other essential nutrients including molybdenum.

Interpretation of soil pH with respect to plant growth is undertaken using the ratings published in Bruce and Rayment (1982[20]) presented below:

[20] *Analytical Methods and Interpretations used by the Agricultural Chemistry Branch for Soil and Land Use Surveys,* Bruce, R.C. and Rayment, G.E., 1982 (Bruce and Rayment 1982)

Table 6-2: Plant Response to Soil pH

pH	Rating
<4.5	Extremely acidic
4.5-5.0	Very strongly acidic
5.1-5.5	Strongly acidic
5.6 – 7.3	Optimal plant growth
7.4-7.8	Mildly alkaline
7.9-8.4	Moderately alkaline
8.5-9.0	Strongly alkaline
>9.1	Very strongly alkaline

6.2.8 CEC in Soil

The ability of soils to attract, retain and exchange cations (positively charged ions) is estimated by the calculated CEC value. CEC represents the major controlling factor in stability of clay soil structure, nutrient availability for plant growth, soil pH and the reaction of the soil to chemical applications (fertilisers, conditioners etc.).

High CEC soils have a greater capacity to retain nutrients, however, deficient soils require greater applications of nutrients to correct imbalances. Low CEC soils have a reduced capacity to retain nutrients and may result in leaching of nutrients from the soil in the event of excess nutrient applications.

Metson (1961[21]) developed a set of ratings for effective CEC and the most abundant cations. These are summarised below (values are in meq/100g):

Table 6-3: CEC Rating

Rating	eCEC	Exch Na	Exch K	Exch Ca	Exch Mg
Very low	<6	0-0.1	0-0.2	0-2	0-0.3
Low	6-12	0.1-0.3	0.2-0.3	2-5	0.3-1
Moderate	12-25	0.3-0.7	0.3-0.7	5-10	1-3
High	25-40	0.7-2	0.7-2	10-20	3-8
Very high	>40	>2	>2	>20	>8

6.2.9 Exchangeable Sodium Percentage or Sodicity

Exchangeable sodium is an important soil stability and salinity parameter. Excessive exchangeable sodium leads to unstable soils, increased runoff, potential salinity, dispersivity and water logging problems.

[21] *Methods of Chemical Analysis for Soil Survey Samples,* Metson, A.J, 1961 (Metson 1961)

Normally the sodium content is expressed as a percentage of the CEC as other cations counteract the negative effects of sodium (known as ESP% and termed sodicity). The effect of the exchangeable sodium (exchangeable sodium percentage, ESP) varies with other soil factors such as the type of clay, the relative quantity of magnesium and the quantity of organic matter. However, Charman & Murphy (2000[22]) indicate that a soil is generally considered sodic if the ESP exceeds 6% and extremely sodic if the ESP exceeds 15%.

6.2.10 Recommendations for Concrete Slabs and Footings in Saline Soils

In the absence of endorsed recommendations for buildings in saline environments, reference is made to the CCAA 2005. The guide provides recommendations on the minimum concrete grade/strength required for slabs and footings in saline soils. Reference should be made to the CCAA 2005 publication for future information:

Table 6-4: Minimum Concrete Grade for Slabs and Footings in Saline Soils

ECe (dS/m)	Salinity Class	Concrete Grade
<2	Non-saline	N20
2-4	Slightly saline	N20
4-8	Moderately saline	N25
8-16	Very saline	N32
>16	Highly saline	≥N40

6.2.11 Recommendations for Durability with Reference to AS2159-2009

In designing for durability, reference should be made to the requirements listed in the AS2159-2009. The exposure classification for concrete and steel piles and foundations is outlined in the following tables.

Table 6-5: Exposure Classification for Concrete Piles

Exposure Conditions				Exposure Classification	
Sulphate (expressed as SO_4)		pH	Chlorides in Groundwater (ppm)	Soil Conditions A[1]	Soil Conditions B[2]
In Soil (ppm)	In Groundwater (ppm)				
<5,000	<1,000	>5.5	<6,000	Mild	Non-aggressive
5,000-10,000	1,000-3,000	4.5-5.5	6,000-12,000	Moderate	Mild
10,000-20,000	3,000-10,000	4-4.5	12,000-30,000	Severe	Moderate
>20,000	>10,000	<4	>30,000	Very severe	Severe

Notes:
1 - High permeability soils (eg sands and gravels) which are in groundwater
2 – Low permeability soils (eg silts and clays) or all soils above groundwater

[22] *Soils: Their Management and Properties,* Charman, P.E.V and Murphy, B.W (eds), 2000 (Charman and Murphy 2000)

Table 6-6: Exposure Classification for Steel Piles

Exposure Conditions				Exposure Classifications	
pH	**Chlorides**		**Resistivity (ohm.cm)**	**Soil Conditions A[1]**	**Soil Conditions B[2]**
	In Soil (ppm)	**In Groundwater (ppm)**			
>5	<5,000	<1,000	>5,000	Non-aggressive	Non-aggressive
4-5	5,000-20,000	1,000-10,000	2,000-5,000	Mild	Non-aggressive
3-4	20,000-50,000	10,000-20,000	1,000-2,000	Moderate	Mild
<3	>50,000	>20,000	<1,000	Severe	Moderate

Notes:
1 - High permeability soils (eg sands and gravels) which are in groundwater
2 – Low permeability soils (eg silts and clays) or all soils above groundwater

7 INVESTIGATION RESULTS

7.1 Subsurface Conditions

A summary of the subsurface conditions encountered during the investigation is presented in the table below. Reference should be made to the logs attached in the appendices for further details.

7.1.1 Stratigraphy

Table 7-1: Summary of Soil Stratigraphy

Profile	Description (m in bgl)
Fill	Silty sandy fill and silty clayey fill was encountered from surface level in all boreholes and test pits. The fill extended to depths ranging from approximately 0.3m (TP221, TP223 & TP224) to 5.8m (BH208). Based on SPT results the fill was assessed to be poorly to well compacted. Inclusions in the fill comprised: sandstone, ironstone and igneous gravel; brick; tile; and fibre cement fragments (FCF); ash and slag.
Natural Soil	Natural silty clays were encountered beneath the fill in all boreholes with the exception of BH206, and in test pits TP221 to TP224 & TP227. The clays extended to depths ranging from approximately 0.9m (BH222) to 8.5m (BH207). The clays were assessed to be medium to high plasticity and of firm to hard strength.
Bedrock	Weathered shale bedrock was encountered beneath the natural clays in BH201 to BH210, BH212, BH214, BH215, BH218 & BH219. The shale bedrock extended to refusal and termination depths ranging from approximately 3.6m (BH202 & BH10) to 10.5m (BH207). On first contact, the shale bedrock was assessed to be extremely to distinctly weathered and of extremely low to low strength. With depth the shale improved in quality, and was assessed to be distinctly weathered and of low to high strength. Weathered sandstone bedrock was encountered beneath the natural clays in BH211, BH213, BH216, BH217 & TP222. The sandstone bedrock extended to refusal depths ranging from 1m (TP222) and 4.3m (BH213). The sandstone bedrock was assessed to be distinctly weathered and of very low to medium strength.

7.1.2 Groundwater Conditions

Groundwater seepage was encountered on completion of drilling in BH204 to BH207 at depths ranging from approximately 2.9m (BH204) to 8.2m (BH206). The boreholes were left open and the standing water level (SWL) was measured after approximately 24 hours of drilling. The SWL ranged in depth

from approximately 0.3mbgl (BH205) to 4.3mbgl (BH207). SWL was measured at approximately 6.3mbgl in BH212 after 30 minutes after completion of drilling. BH208 was 'dry' on completion of drilling. The SWL in this boreholes was at a depth of approximately 5.3mbgl after 24 hours.

All remaining boreholes and test pits were noted as 'dry' on completion and the short time following completion. We note that groundwater levels may not have stabilised during the relatively short period between borehole completion and measurement of water levels. Long term monitoring of groundwater levels was outside the scope of this study.

7.2 Field Screening

7.2.1 PID Screening for VOCs

PID soil sample headspace readings are presented in attached report tables and the COC documents attached in the appendices. All results were 0 ppm equivalent isobutylene which indicates a lack of PID detectable VOCs.

7.2.2 Aesthetic Issues

The fill encountered inclusions of FCF, ash and slag. No major odours or discolouration of the soil was noted.

7.3 Summary of Soil Contamination Results

The soil laboratory results are compared to the relevant SAC in the attached report tables. A summary of the results assessed against the SAC is presented below.

Table 7-2: Summary of Soil Contamination Results

Analyte	Results Compared to SAC
Heavy Metals	**HILs:** All heavy metal results were below the HIL-A, HIL-B and HIL-C criteria. **EILs:** The majority of the heavy metal results were below the EIL-AEC and EIL-URPOS criteria. Fill sample BH203 (0.1-0.2m) encountered a zinc elevation of 400mg/kg above the EIL-AEC criterion of 252mg/kg. Fill sample BH208 (0.2-0.4m) encountered an arsenic elevation of 41mg/kg above the EIL-AEC criterion of 40mg/kg. **WC:** All heavy metal results were less than the CT1 criteria.

Analyte	Results Compared to SAC
TRH	**HSLs:** All TRH results were below the HSL-A criteria. **ESLs:** All TRH results were below the EIL-AEC and EIL-URPOS criteria. **WC:** All TRH results were less than the CT1 criteria.
BTEXN	**HSLs:** All BTEXN results were below the HSL-A criteria. **ESLs:** All BTEXN results were below the EIL-AEC and EIL-URPOS criteria. **WC:** All BTEX results were less than the CT1 criteria.
PAHs	**HILs:** All PAH results were below the HIL-A, HIL-B and HIL-C criteria. **HSLs:** All naphthalene results were below the HSL-A criteria. **ESLs:** All benzo(a)pyrene results were below the ESL-AEC and ESL-URPOS criteria. **EILs:** All naphthalene results were below the EIL-AEC and EIL-URPOS criteria. **WC:** All PAH results were less than the relevant CT1 criteria.
OCPs & OPPs	**HILs:** All OCP and OPP results were below the HIL-A, HIL-B and HIL-C criteria. **EILs:** All DDT results were below the EIL-AEC and EIL-URPOS criteria. **WC:** All OCP and OPP results were less than the relevant CT1 criteria.
PCBs	**HILs:** All PCB results were below the HIL-A, HIL-B and HIL-C criteria.

Analyte	Results Compared to SAC
	WC: All PCB results were less than the CT1 criterion.
Asbestos	Asbestos was detected in the FCF samples encountered in test pits TP226 and TP277.

7.4 Summary of Soil Salinity Results & Interpretation

The salinity laboratory results are presented in the attached report tables. A summary of the results assessed against the SAC is presented below.

Table 7-3: Summary of Soil Salinity Results & Interpretation

Analyte	Results Compared to SAC
Soil Salinity and Plant Growth	The ECe results generally ranged from 0.56dS/m to 15.2dS/m. The majority of the samples were classed as either moderate or very saline. No distinct depth profiling was noted.
Soil pH and Plant Growth	The soil pH results ranged from 4.3 to 8.6 and are classed as very strongly acidic to strongly alkaline. The majority of the soils were generally within the optimum range for plant growth.
CEC in Soil	The total CEC values ranged from 6.6meq/100g to 38meq/100g in the low to high range. The majority of the samples were within the moderate range which is typical of the soil formation encountered at the site and are generally indicative of the low levels of organic matter within the soils.
ESP%	The ESP% values of the samples ranged from 1% to 32%. The majority of the ESP results were above the 5% threshold and were classed as sodic to highly sodic.
Concrete Slabs and Footings in Saline Soils (CCAA 2005)	The soils at the site are generally classed as moderate to very saline. The CCAA 2005 recommended concrete grade for slabs and footings in very saline soils is N32. Reference should also be made to AS2159-2009 for minimum concrete strengths and reinforcement cover for concrete piles/foundations.
Soil Conditions for Exposure Classification (AS2159-2009)	The subsurface conditions at the site generally comprise of low permeability soils (i.e. silts and clays). Based on this, the exposure classification outlined under 'Soil Conditions B' has been adopted for the assessment.
Exposure Classification for Concrete	The soil pH and sulphate results indicate that the soils are mild to moderately aggressive towards buried concrete.

Analyte	Results Compared to SAC
Piles/Foundations (AS2159-2009)	
Exposure Classification for Steel Piles/Foundations (AS2159-2009)	The soil resistivity, pH and chloride results indicate that the soils are mild to moderately aggressive towards buried steel.

8 DATA QUALITY ASSESSMENT

8.1 Assessment of Data Quality Indicators (DQIs)

As part of the study, the following data quality indicators (DQIs) were assessed: precision, accuracy, representativeness, completeness and comparability. Reference should be made to the appendices for an explanation of the individual DQI.

Table 8-1: Assessment of DQIs

	Precision	Accuracy	Representativeness	Completeness	Comparability
Field Considerations:					
The investigation was designed to obtain appropriate media encountered during the field work as outlined in the SAQP. Due to the preliminary nature of the study groundwater, surface water or sediments have not been assessed.			Y	Y	
Samples were obtained from various depths based on the subsurface conditions encountered at the sampling locations. All samples were recorded on the appropriate logs and documentation attached in the appendices.				Y	
The investigation was undertaken by trained staff in accordance with the EIS Standing Sampling Procedures (SSP). Consistency was maintained during sampling in accordance with the SSP. The SSP is part of the AS/NZS ISO 9001 quality system maintained by JK Group. The SSP is reviewed on a regular basis.	Y	Y		Y	Y
Field work documentation outlined in the SAQP is attached in the appendices. Field observations and climate conditions were noted on the site description record.				Y	Y
Laboratory Considerations:					
Appropriate sample preservation, handling, holding time and COC procedures were adopted for the investigation.				Y	
Selected samples were analysed for a range of CoPC as outlined in the SAQP.			Y	Y	
All samples were analysed by NATA registered laboratory/s in accordance with the analytical methods outlined in NEPM 2013. Appropriate analytical methods and PQLs were used by the laboratory.				Y	Y
All field QA/QC were analysed by the primary and secondary laboratories as outlined in the SAQP. The same units were used by the laboratory/s for all of the analysis.					Y

	Precision	Accuracy	Representativeness	Completeness	Comparability
Field Duplicate Samples The field QA/QC analysis adopted for the study is outlined below. Calculation of the Relative Percentage Difference (RPD) from the primary and duplicate results was undertaken in accordance with the procedure outlined in the attached appendices. Assessment of RPD results against the acceptance criteria is outlined in **Section 5.1**. Intra-laboratory RPD Results: Soil Samples at a frequency of 5% of the primary samples: • Dup JS1 is a soil duplicate of primary sample BH205 (0-0.2m) • Dup JS2 is a soil duplicate of primary sample BH215 (0-0.2m) • Dup JS3 is a soil duplicate of primary sample TP221 (0.1-0.2m) The intra-laboratory results are presented in the attached report tables. The results indicated that field precision was acceptable. The RPD value for zinc (Table CG-1) was outside the acceptance criteria. This could be attributed to sample heterogeneity and the difficulties associated with obtaining homogenous duplicate samples of heterogeneous matrices. As both the primary and duplicate sample results were less than the SAC, the exceedances are not considered to have had an adverse impact on the data set as a whole.	Y				
Field Rinsate (FR): FR1 and FR2 samples obtained from the field equipment decontamination process were analysed for BTEX. The results are presented in the attached report tables. All results were below the PQL which indicates that cross-contamination artefacts associated with sampling equipment were not present.	Y	Y			
Trip Blank (TB): Five soil trip blanks TB1 to TB5 were analysed for BTEX at a frequency of one blank per day of field work. The results are presented in the attached report tables. The results were all less than the PQLs.	Y	Y			
Review of Laboratory QA/QC Procedures: A review of the laboratory report/s indicate that the analytical results were generally within the acceptance criteria adopted by the laboratory/s.	Y	Y			

8.2 QA/QC Review

A review of the QA/QC program adopted for the study indicates an acceptable level of confidence in the analytical program. The field and laboratory data are considered to be valid and acceptable to achieve the objectives of the study.

9 REVIEW AND DISCUSSION OF RESULTS

9.1 Summary of Site Contamination

9.1.1 Soil Contamination – Fill Material

Significant widespread soil contamination was not encountered in the sampling locations. Minor elevations of EILs were encountered in Site A. These elevations are considered to be associated with the uncontrolled fill imported onto the site from unknown sources.

Two FCF fragments encountered in test pits TP226 and TP227 in Site A were analysed for asbestos. The samples encountered Chrysotile and Amosite asbestos in the bonded form. The site history indicates that numerous former buildings were demolished at the site. The DP 2004 report identified asbestos in fill as a cause of concern.

Uncontrolled filling has occurred at the site which could have also resulted in importing asbestos containing material (ACM) along with the fill onto the site.

Due to the limited subsurface investigation undertaken for the study, the distribution of ACM in the fill has not been adequately characterised. Additional investigation will be required to better characterise the extent of asbestos contamination.

9.1.2 Use of Herbicides in Waterways

The EPA records indicate that herbicides have been used in the waterways which includes Bungarribee Creek. The herbicides could have impacted the sediment and soil along the creek line. Additional investigation is required along the creek to assess the potential for herbicide contamination at the site.

9.1.3 Groundwater

The groundwater table is relatively shallow in low lying sections of the site. The groundwater could have been impacted by contaminants including herbicides. Groundwater screening is required to better assess the impacts.

9.2 Tier 1 Risk Assessment

For a contaminant to represent a risk to a receptor, the following three conditions must be present:

1. Source – The presence of a contaminant;
2. Pathway – A mechanism or action by which a receptor can become exposed to the contaminant; and
3. Receptor – The human or ecological entity which may be adversely impacted following exposure to contamination.

If one of the above components is missing, the potential for adverse risks is relatively low.

The assessment has identified the following contamination issues at the site:

Table 9-1: Tier 1 Risk Assessment and Review of CSM

Contaminant of Primary Concern (CoPC)	Receptor and Exposure Pathway	Discussion and Risk Rating
Asbestos in FCF	Human Receptors: Inhalation of airborne asbestos fibres	The investigation encountered FCF containing asbestos. During sampling the FCF were assessed to be in good conditions and could not be broken by hand pressure. Hence the material was assessed to be 'non-friable' based on field information. EIS are of the opinion that the risk posed to human receptors is low to moderate and will require remediation and/or management. Additional testing is required to assess the extent of asbestos contamination at the site.
Arsenic and Zinc in Site A	Environmental Receptors: Direct exposure to plants and animals	The CoPC were above the EAC for Areas of Ecological Significance adopted for the investigation in Site A. These elevations may pose a risk to environmental receptors. However the elevations are relatively marginal and were only detected at two locations i.e. the potential impacts are unlikely to be significant and widespread. An ecological risk assessment may be required for the site.

9.3 Soil Salinity

The Stage 1 ESA has indicated that the site is impacted by dryland salinity. A summary of the salinity conditions are as follows:

- The soils at the site are either moderate or very saline. No distinct depth profiling was noted. The CCAA 2005 recommended concrete grade for slabs and footings in very saline soils is N32;
- The soil pH results ranged from 4.3 to 8.6 and are classed as very strongly acidic to strongly alkaline. The majority of the soils were generally within the optimum range for plant growth;
- The majority of the CEC values were within the moderate range which is typical of the soil formation encountered at the site and are generally indicative of the low levels of organic matter within the soils;
- The majority of the ESP results were above the 5% threshold and were classed as sodic to highly sodic;
- The soil pH and sulphate results indicate that the soils are mild to moderately aggressive towards buried concrete; and

- The soil resistivity, pH and chloride results indicate that the soils are mild to moderately aggressive towards buried steel.

The groundwater salinity conditions have not been assessed for this study. The salinity conditions in groundwater can be different to the soil conditions. Additional testing will be required in order to prepare a Salinity Management Plan (SMP) for the proposed development at the site.

9.4 Preliminary Waste Classification for Soil Disposal

The preliminary waste classification of soil for off-site disposal is summarised in the following table:

Table 9-2: Preliminary Waste Classification

Site Extent / Material Type	Classification	Disposal Option
Fill material in Site B	General Solid Waste (non-putrescible) (GSW)	A NSW EPA landfill licensed to receive the waste stream. The landfill should be contacted to obtain the required approvals prior to commencement of excavation. Alternatively, the fill material is considered to be suitable for re-use on the subject site (only) provided it meets geotechnical and earthwork requirements.
Fill material in Site A	General Solid Waste (non-putrescible) (GSW) containing asbestos	A NSW EPA landfill licensed to receive the waste stream. The landfill should be contacted to obtain the required approvals prior to commencement of excavation. Soil contaminated with asbestos can be managed on-site by implementing a remediation and management strategy.
Natural silty clay soil and shale/sandstone bedrock	Virgin excavated natural material (VENM)	VENM is considered suitable for re-use on-site, or alternatively, the information included in this report may be used to assess whether the material is suitable for beneficial reuse at another site as fill material. Alternatively, the natural material can be disposed of as VENM to a facility licensed by the NSW EPA to receive the waste stream.

9.5 Data Gaps

The assessment has identified the following data gaps:

- Large areas of the site has not been investigated. Sampling for the Stage 1 study was confined to 20% of the minimum density recommended by the EPA;
- Groundwater, surface water, creek sediments and creek soil samples were not analysed for the Stage 1 study;
- Additional testing of the fill will be required to characterise the extent of asbestos contamination;
- Additional waste classification will be required for the off-site disposal of fill; and
- Salinity management plan will be required for the proposed development.

10 CONCLUSION

10.1 Site Suitability

EIS consider that the report objectives outlined in **Section 1.2** have been addressed.

EIS consider that the site can be made suitable for the proposed master plan development provided the following recommendations are implemented to address the data gaps and to better manage/characterise the risks:

1. Undertake a Preliminary Stage 2 ESA to address the data gaps identified in **Section 9.5;**

2. Prepare a Salinity Management Plan (SMP) for the proposed development; and

3. Prepare a Remediation Action Plan (RAP) for the proposed development. The RAP should include a Unexpected Finds Protocol (UFP) for the earthworks at the site.

10.2 Regulatory Requirement

The regulatory requirements applicable for the proposed development is summarised in the section below. Reference should be made to the development consent for more information.

10.2.1 Contaminated Land Management Act 1997 (CLM Act)

The CLM Act establishes a legal framework that gives the EPA powers to require the assessment and remediation of sites where contamination is significant enough to warrant regulation. Where the EPA's intervention is not needed, the NSW planning and development framework will determine the appropriate use of sites in the future.

Under section 60 of the CLM Act the following people are required to notify the EPA as soon as practical after they become aware of the contamination:

- Anyone whose activities have contaminated land; and
- An owner of land that has been contaminated.

10.2.1.1 Duty to Report Contamination

The duty to report contamination to the EPA is outlined in the NSW EPA (2015[23]) *Guidelines on the Duty to Report Contamination under the Contaminated land Management Act 1997*.

[23] referred to as Duty to Report Contamination 2015

At this stage, EIS consider that there is no requirement to notify the NSW EPA of the site contamination. After successful implementation of the RAP, the site contamination is unlikely to meet the Notification Triggers.

10.2.2 NSW EPA Requirements

10.2.2.1 Protection of the Environment Operation Act 1997

Section 143 of the POEO Act 1997 states that if waste is transported to a place that cannot lawfully be used as a waste facility for that waste, then the transporter and owner of the waste are each guilty of an offence. The transporter and owner of the waste have a duty to ensure that the waste is disposed of in an appropriate manner.

10.2.2.2 Water Management Act 2000

The remediation of contaminated groundwater may require treatment. Relevant approval should be obtained from NSW EPA and NSW Department of Primary Industries Water (DPIW) prior to the commencement of pumping and treatment.

10.2.3 Local Government Requirements

10.2.3.1 Dewatering Approvals

In the event groundwater is intercepted during excavation works, dewatering will be required. Council and other relevant approvals will be required prior to disposal of groundwater into the stormwater system.

10.2.3.2 Work Health and Safety

Sites contaminated with asbestos become a 'workplace' when work is carried out there and require a register and asbestos management plan in accordance with the WHS Code of Practice 2011[24].

[24] WHS Regulation, (2011), *Code of Practice – How to Manage and Control Asbestos in the Workplace*.

11 LIMITATIONS

The report limitations are outlined below:

- EIS accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
- Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
- This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the EIS proposal; and terms of contract between EIS and the client (as applicable);
- The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
- Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes;
- The investigation and preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
- Where information has been provided by third parties, EIS has not undertaken any verification process, except where specifically stated in the report;
- EIS has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
- EIS accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
- EIS have not and will not make any determination regarding finances associated with the site;
- Additional investigation work may be required in the event of changes to the proposed development or landuse. EIS should be contacted immediately in such circumstances;
- Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
- This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.

IMPORTANT INFORMATION ABOUT THIS REPORT

These notes have been prepared by EIS to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors
This report has been prepared in response to specific project requirements as stated in the EIS proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

EIS/J&K will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by EIS to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions
Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data
Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Assessment Limitations
Although information provided by a site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Assessments by Design Professionals

Costly problems can occur when other design professionals develop plans based on misinterpretation of an assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Assessment Report

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the assessment. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

TABLE CA - PROPOSED CHILDCARE DEVELOPMENT
SOIL LABORATORY RESULTS COMPARED TO HIL-A
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium VI [2]	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P TEQ [3]	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos		
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC) [1]			100	20	100	6000	300	40	400	7400	300	3	10	270	300	6	50	240	6	160	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH211	0-0.2	FILL: Silty Clay	8	LPQL	17	25	31	LPQL	12	69	0	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH211	0.9-1.2	FILL: Silty Clay	12	LPQL	14	30	15	LPQL	33	61	0	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Number of Samples			2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1
Maximum Value			12	LPQL	17	30	31	LPQL	33	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NC

Explanation:

1 - Site Assessment Criteria (SAC): NEPM 2013, HIL-A: 'Residential with garden/accessible soils; children's day care centers; preschools; and primary schools'

2 - The results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.

3 - B(a)P TEQ - Benzo(a)pyrene Toxicity Equivalence Quotient has been calculated based on 8 carcinogenic PAHs and their Toxic Equivalence Factors (TEFs) outlined in NEPM 2013

Concentration above the SAC **VALUE**

Abbreviations:

PAHs: Polycyclic Aromatic Hydrocarbons	UCL: Upper Level Confidence Limit on Mean Value
B(a)P: Benzo(a)pyrene	HILs: Health Investigation Levels
PQL: Practical Quantitation Limit	NA: Not Analysed
LPQL: Less than PQL	NC: Not Calculated
OPP: Organophosphorus Pesticides	NSL: No Set Limit
OCP: Organochlorine Pesticides	SAC: Site Assessment Criteria
PCBs: Polychlorinated Biphenyls	NEPM: National Environmental Protection Measure

TABLE CB - SITE B RESIDENTIAL DEVELOPMENT
SOIL LABORATORY RESULTS COMPARED TO HIL-B
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)	TOTAL PCBs	ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium VI [2]	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P TEQ [3]	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos		
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC) [1]			500	150	500	30000	1200	120	1200	60000	400	4	15	400	500	10	90	600	10	340	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH212	0-0.2	FILL: Sandy Silt	7	LPQL	11	18	20	LPQL	9	89	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH212	1.0-1.2	FILL: Silty Clay	7	LPQL	16	38	20	LPQL	29	85	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH212	1.0-1.2	FILL: Silty Clay	6	LPQL	16	39	20	LPQL	31	89	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH212	2.0-2.2	FILL: Silty Clay	8	LPQL	14	39	13	LPQL	20	93	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH213	0-0.3	FILL: Sandy Silt	7	LPQL	13	19	20	LPQL	11	83	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH213	1.0-1.2	FILL: Silty Clay	13	LPQL	10	38	13	LPQL	22	80	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH213	2.0-2.2	FILL: Silty Clay	5	LPQL	13	17	14	LPQL	8	25	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH214	0-0.4	FILL: Silty Clay	6	LPQL	19	110	26	LPQL	10	94	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH214	1.0-1.3	FILL: Silty Clay	13	LPQL	12	37	18	LPQL	17	84	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH215	0-0.2	FILL: Sandy Silt	8	LPQL	11	24	24	LPQL	13	86	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH215	1.0-1.2	FILL: Sandy Silt	10	LPQL	13	39	16	LPQL	25	79	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH215	1.0-1.2	FILL: Sandy Silt	11	LPQL	12	41	16	LPQL	24	81	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH215	2.0-2.2	FILL: Silty Clay	6	LPQL	10	16	10	LPQL	3	19	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH215	2.8-3.0	FILL: Silty Clay	12	LPQL	18	19	13	LPQL	9	28	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH216	0-0.2	FILL: Sandy Silt	4	LPQL	10	12	16	LPQL	6	51	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH216	1.0-1.3	FILL: Silty Clay	5	LPQL	18	14	14	LPQL	9	22	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH217	0-0.3	FILL: Sandy Silt	10	LPQL	23	17	30	LPQL	9	36	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH217	0.9-1.2	FILL: Silty Clay	8	LPQL	22	17	16	LPQL	10	26	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH218	0-0.3	FILL: Sandy Silt	11	LPQL	9	46	18	LPQL	25	98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH218	0.9-1.2	FILL: Silty Clay	9	LPQL	20	21	17	LPQL	9	33	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH218	1.8-2.1	FILL: Silty Clay	6	LPQL	19	20	12	LPQL	11	34	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH219	0-0.2	FILL: Sandy Silt	LPQL	LPQL	8	11	12	LPQL	5	35	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH219	0-0.2	FILL: Sandy Silt	LPQL	LPQL	9	11	12	LPQL	5	37	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP220	0-0.1	FILL: Sandy Silt	4	LPQL	11	13	26	LPQL	7	56	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP220	0.4-0.5	FILL: Sility Clay	5	LPQL	12	15	12	LPQL	4	18	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP220	1.5-1.7	FILL: Silty Clay	10	LPQL	26	12	21	LPQL	6	19	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP228	0.1-0.2	FILL: Sandy Silt	11	LPQL	19	23	22	LPQL	15	67	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP229	0-0.1	FILL: Sandy Silt	7	LPQL	13	15	20	LPQL	9	53	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
Total Number of Samples			28	28	28	28	28	28	28	28	28	28	12	12	12	12	12	12	12	12	12	11
Maximum Value			13	LPQL	26	110	30	LPQL	31	98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NC

Explanation:

1 - Site Assessment Criteria (SAC): NEPM 2013, HIL-B: 'Residential with minimal opportunities for soil access; including dwellings with fully/permanently paved yards like high-rise buildings'

2 - The results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.

3 - B(a)P TEQ - Benzo(a)pyrene Toxicity Equivalence Quotient has been calculated based on 8 carcinogenic PAHs and their Toxic Equivalence Factors (TEFs) outlined in NEPM 2013

Concentration above the SAC **VALUE**

Abbreviations:

PAHs: Polycyclic Aromatic Hydrocarbons
B(a)P: Benzo(a)pyrene
PQL: Practical Quantitation Limit
LPQL: Less than PQL
OPP: Organophosphorus Pesticides
OCP: Organochlorine Pesticides
PCBs: Polychlorinated Biphenyls
UCL: Upper Level Confidence Limit on Mean Value
HILs: Health Investigation Levels
NA: Not Analysed
NC: Not Calculated
NSL: No Set Limit
SAC: Site Assessment Criteria
NEPM: National Environmental Protection Measure

TABLE CC - SITE A PLAYING FIELDS
SOIL LABORATORY RESULTS COMPARED TO HIL-C
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES (OCPs)							OP PESTICIDES (OPPs)		
			Arsenic	Cadmium	Chromium VI [2]	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P TEQ [3]	HCB	Endosulfan	Methoxychlor	Aldrin & Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	Chlorpyrifos	TOTAL PCBs	ASBESTOS FIBRES
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100
Site Assessment Criteria (SAC) [1]			300	90	300	17000	600	80	1200	30000	300	3	10	340	400	10	70	400	10	250	1	Detected/Not Detected
Sample Reference	**Sample Depth**	**Sample Description**																				
BH201	0.1-0.2	FILL: Silty Clay	6	LPQL	18	20	17	LPQL	5	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH201	0.1-0.2	FILL: Silty Clay	6	LPQL	17	25	16	LPQL	4	26	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH202	0.1-0.2	FILL: Silty Clay	11	LPQL	25	11	17	LPQL	3	14	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH203	0.1-0.2	FILL: Silty Clay	18	0.5	20	30	92	LPQL	16	400	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH204	0-0.1	FILL: Sandy Silt	6	LPQL	14	13	29	LPQL	6	59	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH205	0-0.2	FILL: Silty Clay	6	LPQL	13	20	28	LPQL	10	58	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH206	0.2-0.4	FILL: Silty Clay	6	0.5	16	29	24	LPQL	8	99	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH206	2.0-2.2	FILL: Silty Clay	LPQL	LPQL	15	31	13	LPQL	13	46	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH207	0.2-0.4	FILL: Silty Sand	5	LPQL	16	31	14	LPQL	29	46	1.5	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH207	1.2-1.4	FILL: Silty Clay	9	LPQL	20	23	18	LPQL	12	52	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH207	2.8-3.0	FILL: Silty Clay	9	LPQL	19	37	21	LPQL	21	64	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH208	0.2-0.4	FILL: Gravelly Silty Sand	35	LPQL	15	41	19	LPQL	21	71	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH208	0.2-0.4	FILL: Gravelly Silty Sand	41	LPQL	13	38	21	LPQL	21	67	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH208	1.6-2.0	FILL: Silty Clay	9	LPQL	19	39	26	LPQL	21	62	8.1	0.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH208	3.6-4.0	FILL: Silty Clay	9	LPQL	18	21	25	LPQL	10	29	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH209	0.1-0.2	FILL: Silty Sand	9	LPQL	13	40	15	LPQL	19	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH209	1.0-1.2	FILL: Silty Sand	20	LPQL	8	52	16	LPQL	22	81	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH209	3.6-3.8	FILL: Silty Clay	8	LPQL	18	18	22	LPQL	8	20	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH210	0.1-0.4	FILL: Silty Clay	6	LPQL	14	26	13	LPQL	14	38	0.07	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH210	1.0-1.3	FILL: Silty Clay	18	LPQL	10	42	13	LPQL	26	69	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BH210	1.9-2.1	FILL: Silty Clay	17	LPQL	8	42	15	LPQL	20	70	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP221	0.1-0.2	FILL: Silty Clay	11	LPQL	22	11	25	LPQL	4	27	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP222	0-0.2	FILL: Silty Clay	13	LPQL	19	23	39	LPQL	10	89	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP223	0-0.2	FILL: Silty Clay	10	LPQL	19	18	36	LPQL	8	60	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP224	0-0.2	FILL: Silty Clay	5	LPQL	15	13	19	LPQL	6	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP225	0-0.2	FILL: Silty Clay	10	LPQL	17	29	48	LPQL	17	91	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP225	0.7-0.8	FILL: Sandy Silt	6	LPQL	14	36	23	LPQL	20	67	2.9	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP225	1.1-1.3	FILL: Silty Clay	5	LPQL	14	33	28	LPQL	22	77	0.25	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP225	1.1-1.3	FILL: Silty Clay	6	LPQL	15	33	22	LPQL	19	60	0.06	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP226	0-0.2	FILL: Sandy Silt	LPQL	LPQL	9	15	29	0.1	6	76	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP226	0.4-0.5	FILL: Silty Clay	6	LPQL	19	30	29	0.3	22	68	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP226	1.3-1.5	FILL: Silty Clay	7	LPQL	12	16	10	LPQL	5	24	LPQL	LPQL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TP227	0-0.2	FILL: Silty Clay	5	LPQL	13	20	35	LPQL	10	160	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
FTP226	0.2	Fibre Cement Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Asbestos Detected**
FTP227	0.1	Fibre Cement Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Asbestos Detected**
Total Number of Samples			33	33	33	33	33	33	33	33	33	33	19	19	19	19	19	19	19	19	19	19
Maximum Value			41	0.5	25	52	92	0.3	29	400	8.1	0.9	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NC

Explanation:

1 - Site Assessment Criteria (SAC): NEPM 2013, HIL-C: 'Public open space; secondary schools; and footpaths'

2 - The results are for Total Chromium which includes Chromium III and VI. For initial screening purposes, we have assumed that the samples contain only Chromium VI unless demonstrated otherwise by additional analysis.

3 - B(a)P TEQ - Benzo(a)pyrene Toxicity Equivalence Quotient has been calculated based on 8 carcinogenic PAHs and their Toxic Equivalence Factors (TEFs) outlined in NEPM 2013

Concentration above the SAC **VALUE**

Abbreviations:

PAHs: Polycyclic Aromatic Hydrocarbons
B(a)P: Benzo(a)pyrene
PQL: Practical Quantitation Limit
LPQL: Less than PQL
OPP: Organophosphorus Pesticides
OCP: Organochlorine Pesticides
PCBs: Polychlorinated Biphenyls
UCL: Upper Level Confidence Limit on Mean Value
HILs: Health Investigation Levels
NA: Not Analysed
NC: Not Calculated
NSL: No Set Limit
SAC: Site Assessment Criteria
NEPM: National Environmental Protection Measure

TABLE CD1 - SITE A & SITE B
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID [2]
PQL - Envirolab Services					25	50	0.2	0.5	1	3	1	
HSL Land Use Category [1]					RESIDENTIAL WITH ACCESSIBLE SOIL							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH201	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH201	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH202	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH203	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH204	0-0.1	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH205	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH206	0.2-0.4	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH206	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH207	0.2-0.4	FILL: Silty Sand	0m to < 1m	Sand	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH207	1.2-1.4	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH207	2.8-3.0	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH208	0.2-0.4	FILL: Gravelly Silty Sand	0m to < 1m	Sand	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH208	0.2-0.4	FILL: Gravelly Silty Sand	0m to < 1m	Sand	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH208	1.6-2.0	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH208	3.6-4.0	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH209	0.1-0.2	FILL: Silty Sand	0m to < 1m	Sand	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH209	1.0-1.2	FILL: Silty Sand	1m to <2m	Sand	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH209	3.6-3.8	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH210	0.1-0.4	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH210	1.0-1.3	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH210	1.9-2.1	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH211	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH211	0.9-1.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH212	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH212	1.0-1.2	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH212	1.0-1.2	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH212	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH213	0-0.3	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH213	1.0-1.2	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH213	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH214	0-0.4	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH214	1.0-1.3	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH215	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH215	1.0-1.2	FILL: Sandy Silt	1m to <2m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH215	1.0-1.2	FILL: Sandy Silt	1m to <2m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH215	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH215	2.8-3.0	FILL: Silty Clay	2m to <4m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
Total Number of Samples					37	37	37	37	37	37	37	37
Maximum Value					LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL

Explanation:
1 - Site Assessment Criteria (SAC): NEPM 2013
2 - Field PID values obtained during the investigation

Concentration above the SAC **VALUE**
The guideline corresponding to the elevated value is highlighted in grey in the Site Assessment Criteria Table below

Abbreviations:

UCL: Upper Level Confidence Limit on Mean Value	NC: Not Calculated	PQL: Practical Quantitation Limit
HSLs: Health Screening Levels	NL: Not Limiting	LPQL: Less than PQL
NA: Not Analysed	SAC: Site Assessment Criteria	NEPM: National Environmental Protection Measure

SITE ASSESSMENT CRITERIA

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
PQL - Envirolab Services					25	50	0.2	0.5	1	3	1
HSL Land Use Category [1]					RESIDENTIAL WITH ACCESSIBLE SOIL						
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**							
BH201	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH201	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH202	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH203	0.1-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH204	0-0.1	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH205	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH206	0.2-0.4	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH206	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH207	0.2-0.4	FILL: Silty Sand	0m to < 1m	Sand	45	110	0.5	160	55	40	3
BH207	1.2-1.4	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH207	2.8-3.0	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH208	0.2-0.4	FILL: Gravelly Silty Sand	0m to < 1m	Sand	45	110	0.5	160	55	40	3
BH208	0.2-0.4	FILL: Gravelly Silty Sand	0m to < 1m	Sand	45	110	0.5	160	55	40	3
BH208	1.6-2.0	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH208	3.6-4.0	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH209	0.1-0.2	FILL: Silty Sand	0m to < 1m	Sand	45	110	0.5	160	55	40	3
BH209	1.0-1.2	FILL: Silty Sand	1m to <2m	Sand	70	240	0.5	220	NL	60	NL
BH209	3.6-3.8	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH210	0.1-0.4	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH210	1.0-1.3	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH210	1.9-2.1	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH211	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH211	0.9-1.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH212	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH212	1.0-1.2	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH212	1.0-1.2	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH212	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH213	0-0.3	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH213	1.0-1.2	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH213	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH214	0-0.4	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH214	1.0-1.3	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH215	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH215	1.0-1.2	FILL: Sandy Silt	1m to <2m	Silt	65	NL	0.7	NL	NL	210	NL
BH215	1.0-1.2	FILL: Sandy Silt	1m to <2m	Silt	65	NL	0.7	NL	NL	210	NL
BH215	2.0-2.2	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL
BH215	2.8-3.0	FILL: Silty Clay	2m to <4m	Clay	150	NL	2	NL	NL	NL	NL

TABLE CD1 - SITE A & SITE B
SOIL LABORATORY RESULTS COMPARED TO HSLs
All data in mg/kg unless stated otherwise

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	PID [2]
PQL - Envirolab Services					25	50	0.2	0.5	1	3	1	
HSL Land Use Category [1]					**RESIDENTIAL WITH ACCESSIBLE SOIL**							
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**								
BH216	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH216	1.0-1.3	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH217	0-0.3	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH217	0.9-1.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH218	0-0.3	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH218	0.9-1.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH218	1.8-2.1	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH219	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
BH219	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP220	0-0.1	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP220	0.4-0.5	FILL: Sility Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP220	1.5-1.7	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP221	0.1-0.2	FILL: Sility Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP222	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP223	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP224	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP225	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP225	0.7-0.8	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP225	1.1-1.3	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP225	1.1-1.3	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP226	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP226	0.4-0.5	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP226	1.3-1.5	FILL: Silty Clay	1m to <2m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP227	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP228	0.1-0.2	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
TP229	0-0.1	FILL: Sandy Silt	0m to < 1m	Silt	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0
Total Number of Samples					26	26	26	26	26	26	26	26
Maximum Value					LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL

Explanation:
1 - Site Assessment Criteria (SAC): NEPM 2013
2 - Field PID values obtained during the investigation

Concentration above the SAC **VALUE**
The guideline corresponding to the elevated value is highlighted in grey in the Site Assessment Criteria Table below

Abbreviations:

UCL: Upper Level Confidence Limit on Mean Value	NC: Not Calculated	PQL: Practical Quantitation Limit
HSLs: Health Screening Levels	NL: Not Limiting	LPQL: Less than PQL
NA: Not Analysed	SAC: Site Assessment Criteria	NEPM: National Environmental Protection Measure

SITE ASSESSMENT CRITERIA

					C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene
PQL - Envirolab Services					25	50	0.2	0.5	1	3	1
HSL Land Use Category [1]					**RESIDENTIAL WITH ACCESSIBLE SOIL**						
Sample Reference	**Sample Depth**	**Sample Description**	**Depth Category**	**Soil Category**							
BH216	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH216	1.0-1.3	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH217	0-0.3	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH217	0.9-1.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH218	0-0.3	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH218	0.9-1.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
BH218	1.8-2.1	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
BH219	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
BH219	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
TP220	0-0.1	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
TP220	0.4-0.5	FILL: Sility Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP220	1.5-1.7	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
TP221	0.1-0.2	FILL: Sility Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP222	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP223	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP224	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP225	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP225	0.7-0.8	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
TP225	1.1-1.3	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
TP225	1.1-1.3	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
TP226	0-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
TP226	0.4-0.5	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP226	1.3-1.5	FILL: Silty Clay	1m to <2m	Clay	90	NL	1	NL	NL	310	NL
TP227	0-0.2	FILL: Silty Clay	0m to < 1m	Clay	50	280	0.7	480	NL	110	5
TP228	0.1-0.2	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4
TP229	0-0.1	FILL: Sandy Silt	0m to < 1m	Silt	40	230	0.6	390	NL	95	4

TABLE CE - SITES A & B
SOIL LABORATORY RESULTS COMPARED TO WASTE CLASSIFICATION GUIDELINES (2014)
All data in mg/kg unless stated otherwise

			HEAVY METALS								PAHs		OC/OP PESTICIDES				Total PCBs	TRH					BTEX COMPOUNDS					ASBESTOS FIBRES
			Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Total Endosulfans	Chloropyrifos	Total Moderately Harmful [2]	Total Scheduled [3]		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total C_{10}-C_{36}	Benzene	Toluene	Ethyl benzene	Total Xylenes	
PQL - Envirolab Services			4	0.4	1	1	1	0.1	1	1	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	250	0.2	0.5	1	3	100
General Solid Waste CT1 [1]			100	20	100	NSL	100	4	40	NSL	200	0.8	60	4	250	<50	<50	650		NSL		10,000	10	288	600	1,000	-
General Solid Waste SCC1 [1]			500	100	1900	NSL	1500	50	1050	NSL	200	10	108	7.5	250	<50	<50	650		NSL		10,000	18	518	1,080	1,800	-
Restricted Solid Waste CT2 [1]			400	80	400	NSL	400	16	160	NSL	800	3.2	240	16	1000	<50	<50	2600		NSL		40,000	40	1,152	2,400	4,000	-
Restricted Solid Waste SCC2 [1]			2000	400	7600	NSL	6000	200	4200	NSL	800	23	432	30	1000	<50	<50	2600		NSL		40,000	72	2,073	4,320	7,200	-
Sample Reference	**Sample Depth**	**Sample Description**																										
BH201	0.1-0.2	FILL: Silty Clay	6	LPQL	18	20	17	LPQL	5	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH201	0.1-0.2	FILL: Silty Clay	6	LPQL	17	25	16	LPQL	4	26	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH202	0.1-0.2	FILL: Silty Clay	11	LPQL	25	11	17	LPQL	3	14	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH203	0.1-0.2	FILL: Silty Clay	18	0.5	20	30	92	LPQL	16	400	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH204	0-0.1	FILL: Sandy Silt	6	LPQL	14	13	29	LPQL	6	59	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH205	0-0.2	FILL: Silty Clay	6	LPQL	13	20	28	LPQL	10	58	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH206	0.2-0.4	FILL: Silty Clay	6	0.5	16	29	24	LPQL	8	99	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH206	2.0-2.2	FILL: Silty Clay	LPQL	LPQL	15	31	13	LPQL	13	46	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH207	0.2-0.4	FILL: Silty Sand	5	LPQL	16	31	14	LPQL	29	46	1.5	0.1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH207	1.2-1.4	FILL: Silty Clay	9	LPQL	20	23	18	LPQL	12	52	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH207	2.8-3.0	FILL: Silty Clay	9	LPQL	19	37	21	LPQL	21	64	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	160	160	LPQL	LPQL	LPQL	LPQL	NA
BH208	0.2-0.4	FILL: Gravelly Silty Sand	35	LPQL	15	41	19	LPQL	21	71	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH208	0.2-0.4	FILL: Gravelly Silty Sand	41	LPQL	13	38	21	LPQL	21	67	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH208	1.6-2.0	FILL: Silty Clay	9	LPQL	19	39	26	LPQL	21	62	8.1	0.6	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH208	3.6-4.0	FILL: Silty Clay	9	LPQL	18	21	25	LPQL	10	29	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH209	0.1-0.2	FILL: Silty Sand	9	LPQL	13	40	15	LPQL	19	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH209	1.0-1.2	FILL: Silty Sand	20	LPQL	8	52	16	LPQL	22	81	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH209	3.6-3.8	FILL: Silty Clay	8	LPQL	18	18	22	LPQL	8	20	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH210	0.1-0.4	FILL: Silty Clay	6	LPQL	14	26	13	LPQL	14	38	0.07	0.07	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH210	1.0-1.3	FILL: Silty Clay	18	LPQL	10	42	13	LPQL	26	69	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH210	1.9-2.1	FILL: Silty Clay	17	LPQL	8	42	15	LPQL	20	70	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH211	0-0.2	FILL: Silty Clay	8	LPQL	17	25	31	LPQL	12	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH211	0.9-1.2	FILL: Silty Clay	12	LPQL	14	30	15	LPQL	33	61	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH212	0-0.2	FILL: Sandy Silt	7	LPQL	11	18	20	LPQL	9	89	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH212	1.0-1.2	FILL: Silty Clay	7	LPQL	16	38	20	LPQL	29	85	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH212	1.0-1.2	FILL: Silty Clay	6	LPQL	16	39	20	LPQL	31	89	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH212	2.0-2.2	FILL: Silty Clay	8	LPQL	14	39	13	LPQL	20	93	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH213	0-0.3	FILL: Sandy Silt	7	LPQL	13	19	20	LPQL	11	83	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH213	1.0-1.2	FILL: Silty Clay	13	LPQL	10	38	13	LPQL	22	80	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH213	2.0-2.2	FILL: Silty Clay	5	LPQL	13	17	14	LPQL	8	25	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH214	0-0.4	FILL: Silty Clay	6	LPQL	19	110	26	LPQL	10	94	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH214	1.0-1.3	FILL: Silty Clay	13	LPQL	12	37	18	LPQL	17	84	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH215	0-0.2	FILL: Sandy Silt	8	LPQL	11	24	24	LPQL	13	86	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH215	1.0-1.2	FILL: Sandy Silt	10	LPQL	13	39	16	LPQL	25	79	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH215	1.0-1.2	FILL: Sandy Silt	11	LPQL	12	41	16	LPQL	24	81	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH215	2.0-2.2	FILL: Silty Clay	6	LPQL	10	16	10	LPQL	3	19	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH215	2.8-3.0	FILL: Silty Clay	12	LPQL	18	19	13	LPQL	9	28	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH216	0-0.2	FILL: Sandy Silt	4	LPQL	10	12	16	LPQL	6	51	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH216	1.0-1.3	FILL: Silty Clay	5	LPQL	18	14	14	LPQL	9	22	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH217	0-0.3	FILL: Sandy Silt	10	LPQL	23	17	30	LPQL	9	36	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH217	0.9-1.2	FILL: Silty Clay	8	LPQL	22	17	16	LPQL	10	26	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH218	0-0.3	FILL: Sandy Silt	11	LPQL	9	46	18	LPQL	25	98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH218	0.9-1.2	FILL: Silty Clay	9	LPQL	20	21	17	LPQL	9	33	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH218	1.8-2.1	FILL: Silty Clay	6	LPQL	19	20	12	LPQL	11	34	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
BH219	0-0.2	FILL: Sandy Silt	LPQL	LPQL	8	11	12	LPQL	5	35	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
BH219	0-0.2	FILL: Sandy Silt	LPQL	LPQL	9	11	12	LPQL	5	37	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP220	0-0.1	FILL: Sandy Silt	4	LPQL	11	13	26	LPQL	7	56	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP220	0.4-0.5	FILL: Silty Clay	5	LPQL	12	15	12	LPQL	4	18	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP220	1.5-1.7	FILL: Silty Clay	10	LPQL	26	12	21	LPQL	6	19	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP221	0.1-0.2	FILL: Silty Clay	11	LPQL	22	11	25	LPQL	4	27	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP222	0-0.2	FILL: Silty Clay	13	LPQL	19	23	39	LPQL	10	89	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP223	0-0.2	FILL: Silty Clay	10	LPQL	19	18	36	LPQL	8	60	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP224	0-0.2	FILL: Silty Clay	5	LPQL	15	13	19	LPQL	6	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP225	0-0.2	FILL: Silty Clay	10	LPQL	17	29	48	LPQL	17	91	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP225	0.7-0.8	FILL: Sandy Silt	6	LPQL	14	36	23	LPQL	20	67	2.9	0.3	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP225	1.1-1.3	FILL: Silty Clay	5	LPQL	14	33	28	LPQL	22	77	0.25	0.05	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP225	1.1-1.3	FILL: Silty Clay	6	LPQL	15	33	22	LPQL	19	60	0.06	0.06	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP226	0-0.2	FILL: Sandy Silt	LPQL	LPQL	9	15	29	0.1	6	76	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	110	600	600	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP226	0.4-0.5	FILL: Silty Clay	6	LPQL	19	30	29	0.3	22	68	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP226	1.3-1.5	FILL: Silty Clay	7	LPQL	12	16	10	LPQL	5	24	LPQL	LPQL	NA	NA	NA	NA	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA
TP227	0-0.2	FILL: Silty Clay	5	LPQL	13	20	35	LPQL	10	160	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP228	0.1-0.2	FILL: Sandy Silt	11	LPQL	19	23	22	LPQL	15	67	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
TP229	0-0.1	FILL: Sandy Silt	7	LPQL	13	15	20	LPQL	9	53	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	No asbestos detected
FTP226	0.2	Fibre Cement Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Asbestos Detected**
FTP227	0.1	Fibre Cement Fragment	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**Asbestos Detected**
Total Number of samples			63	63	63	63	63	63	63	63	63	63	32	32	32	32	32	63	63	63	63	63	63	63	63	63	31
Maximum Value			41	0.5	26	110	92	0.3	33	400	8.1	0.6	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	110	600	600	LPQL	LPQL	LPQL	LPQL	NC

Explanation:
[1] - NSW EPA Waste Classification Guidelines (2014)
[2] - Assessment of Total Moderately Harmful pesticides includes: Dichlorovos, Dimethoate, Fenitrothion, Ethion, Malathion and Parathion
[3] - Assessment of Total Scheduled pesticides include: HBC, alpha-BHC, gamma-BHC, beta-BHC, Heptachlor, Aldrin, Heptachlor Epoxide, gamma-Chlordane, alpha-chlordane, pp-DDE, Dieldrin, Endrin, pp-DDD, pp-DDT, Endrin Aldehyde
[4] - Statistical calculation undertaken using ProUCL version 5.0 (USEPA). Statistical calculation has only been undertaken on fill samples

Concentration above the CT1 — **VALUE**
Concentration above SCC1 — **VALUE**
Concentration above the SCC2 — **VALUE**

Abbreviations:

PAHs: Polycyclic Aromatic Hydrocarbons
B(a)P: Benzo(a)pyrene
PQL: Practical Quantitation Limit
LPQL: Less than PQL
PID: Photoionisation Detector
PCBs: Polychlorinated Biphenyls
UCL: Upper Level Confidence Limit on Mean Value
NA: Not Analysed
NC: Not Calculated
NSL: No Set Limit
SAC: Site Assessment Criteria
TRH: Total Recoverable Hydrocarbons
CT: Contaminant Threshold
SCC: Specific Contaminant Concentration
HILS: Health Investigation Levels
NEPM: National Environmental Protection Measure
BTEX: Monocyclic Aromatic Hydrocarbons

TABLE CF - SITE B RESIDENTIAL DEVELOPMENT
SOIL LABORATORY RESULTS COMPARED TO EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category [1]				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																		
							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH [3]	CEC ($cmol_c/kg$) [3]	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	3	0.05
Ambient Background Concentration (ABC) [2]				-	-	-	NSL	13	28	NSL	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH211	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	8	17	25	31	12	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH211	0.9-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	12	14	30	15	33	61	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH212	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	7	11	18	20	9	89	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH212	1.0-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	7	16	38	20	29	85	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH212	1.0-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	6	16	39	20	31	89	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH212	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	8	14	39	13	20	93	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH213	0-0.3	FILL: Sandy Silt	Fine	6.4	16.5	NA	7	13	19	20	11	83	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH213	1.0-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	13	10	38	13	22	80	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH213	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	5	13	17	14	8	25	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH214	0-0.4	FILL: Silty Clay	Fine	6.4	16.5	NA	6	19	110	26	10	94	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH214	1.0-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	13	12	37	18	17	84	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH215	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	8	11	24	24	13	86	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH215	1.0-1.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	10	13	39	16	25	79	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH215	1.0-1.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	11	12	41	16	24	81	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH215	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	6	10	16	10	3	19	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH215	2.8-3.0	FILL: Silty Clay	Fine	6.4	16.5	NA	12	18	19	13	9	28	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH216	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	4	10	12	16	6	51	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH216	1.0-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	5	18	14	14	9	22	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH217	0-0.3	FILL: Sandy Silt	Fine	6.4	16.5	NA	10	23	17	30	9	36	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH217	0.9-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	8	22	17	16	10	26	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH218	0-0.3	FILL: Sandy Silt	Fine	6.4	16.5	NA	11	9	46	18	25	98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH218	0.9-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	9	20	21	17	9	33	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH218	1.8-2.1	FILL: Silty Clay	Fine	6.4	16.5	NA	6	19	20	12	11	34	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH219	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	LPQL	8	11	12	5	35	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH219	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	LPQL	9	11	12	5	37	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP220	0-0.1	FILL: Sandy Silt	Fine	6.4	16.5	NA	4	11	13	26	7	56	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP220	0.4-0.5	FILL: Silty Clay	Fine	6.4	16.5	NA	5	12	15	12	4	18	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP220	1.5-1.7	FILL: Silty Clay	Fine	6.4	16.5	NA	10	26	12	21	6	19	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP228	0.1-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	11	19	23	22	15	67	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP229	0-0.1	FILL: Sandy Silt	Fine	6.4	16.5	NA	7	13	15	20	9	53	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
Total Number of Samples							30	30	30	30	30	30	30	13	30	30	30	30	30	30	30	30
Maximum Value							13	26	110	31	33	98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL

Explanation:
1 - Site Assessment Criteria (SAC): NEPM 2013
2 - ABC Values for selected metals has been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with high traffic have been quoted)
3 - The average pH and CEC data for the top 2m soil profile was obtained from the salinity tables

Concentration above the SAC VALUE
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

Abbreviations:
EILs: Ecological Investigation Levels
B(a)P: Benzo(a)pyrene
PQL: Practical Quantitation Limit
UCL: Upper Level Confidence Limit on Mean Value
ESLs: Ecological Screening Levels
NA: Not Analysed
LPQL: Less than PQL
SAC: Site Assessment Criteria
NEPM: National Environmental Protection Measure
NC: Not Calculated
NSL: No Set Limit
ABC: Ambient Background Concentration

EIL AND ESL ASSESSMENT CRITERIA

Land Use Category [1]				URBAN RESIDENTIAL AND PUBLIC OPEN SPACE																		
							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH [3]	CEC ($cmol_c/kg$) [3]	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	3	0.05
Ambient Background Concentration (ABC) [2]				-	-	-	NSL	13	28	NSL	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH211	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH211	0.9-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH212	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH212	1.0-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH212	1.0-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH212	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH213	0-0.3	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH213	1.0-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH213	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH214	0-0.4	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH214	1.0-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH215	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH215	1.0-1.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH215	1.0-1.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH215	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH215	2.8-3.0	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH216	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH216	1.0-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH217	0-0.3	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH217	0.9-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH218	0-0.3	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH218	0.9-1.2	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH218	1.8-2.1	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
BH219	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
BH219	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
TP220	0-0.1	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
TP220	0.4-0.5	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
TP220	1.5-1.7	FILL: Silty Clay	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	--	180	120	1300	5600	60	105	125	45	0.7
TP228	0.1-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7
TP229	0-0.1	FILL: Sandy Silt	Fine	6.4	16.5	NA	100	203	238	1100	275	712	710	180	180	120	1300	5600	60	105	125	45	0.7

EIS

TABLE CF2 - SITE A PLAYING FIELDS
SOIL LABORATORY RESULTS COMPARED TO EILs AND ESLs
All data in mg/kg unless stated otherwise

Land Use Category [1]				AREA OF ECOLOGICAL SIGNIFICANCE																		
							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH [3]	CEC ($cmol_c/kg$) [3]	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	3	0.05
Ambient Background Concentration (ABC) [2]				-	-	-	NSL	13	28	NSL	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH201	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	6	18	20	17	5	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH201	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	6	17	25	16	4	26	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH202	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	11	25	11	17	3	14	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH203	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	18	20	30	92	16	400	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH204	0-0.1	FILL: Sandy Silt	Fine	6.4	16.5	NA	6	14	13	29	6	59	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH205	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	6	13	20	28	10	58	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH206	0.2-0.4	FILL: Silty Clay	Fine	6.4	16.5	NA	6	16	29	24	8	99	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH206	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	LPQL	15	31	13	13	46	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH207	0.2-0.4	FILL: Silty Sand	Fine	6.4	16.5	NA	5	16	31	14	29	46	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.1
BH207	1.2-1.4	FILL: Silty Clay	Fine	6.4	16.5	NA	9	20	23	18	12	52	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH207	2.8-3.0	FILL: Silty Clay	Fine	6.4	16.5	NA	9	19	37	21	21	64	LPQL	NA	LPQL	LPQL	LPQL	290	LPQL	LPQL	LPQL	LPQL	LPQL
BH208	0.2-0.4	FILL: Gravelly Silty Sand	Fine	6.4	16.5	NA	35	15	41	19	21	71	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH208	0.2-0.4	FILL: Gravelly Silty Sand	Fine	6.4	16.5	NA	41	13	38	21	21	67	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH208	1.6-2.0	FILL: Silty Clay	Fine	6.4	16.5	NA	9	19	39	26	21	62	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.6
BH208	3.6-4.0	FILL: Silty Clay	Fine	6.4	16.5	NA	9	18	21	25	10	29	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH209	0.1-0.2	FILL: Silty Sand	Fine	6.4	16.5	NA	9	13	40	15	19	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH209	1.0-1.2	FILL: Silty Sand	Fine	6.4	16.5	NA	20	8	52	16	22	81	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH209	3.6-3.8	FILL: Silty Clay	Fine	6.4	16.5	NA	8	18	18	22	8	20	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH210	0.1-0.4	FILL: Silty Clay	Fine	6.4	16.5	NA	6	14	26	13	14	38	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.07
BH210	1.0-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	18	10	42	13	26	69	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
BH210	1.9-2.1	FILL: Silty Clay	Fine	6.4	16.5	NA	17	8	42	15	20	70	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP221	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	11	22	11	25	4	27	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP222	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	13	19	23	39	10	89	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP223	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	10	19	18	36	8	60	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP224	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	5	15	13	19	6	25	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP225	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	10	17	29	48	17	91	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP225	0.7-0.8	FILL: Sandy Silt	Fine	6.4	16.5	NA	6	14	36	23	20	67	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.3
TP225	1.1-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	5	14	33	28	22	77	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.05
TP225	1.1-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	6	15	33	22	19	60	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	0.06
TP226	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	LPQL	9	15	29	6	76	LPQL	LPQL	LPQL	LPQL	220	640	LPQL	LPQL	LPQL	LPQL	LPQL
TP226	0.4-0.5	FILL: Silty Clay	Fine	6.4	16.5	NA	6	19	30	29	22	68	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP226	1.3-1.5	FILL: Silty Clay	Fine	6.4	16.5	NA	7	12	16	10	5	24	LPQL	NA	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
TP227	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	5	13	20	35	10	160	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
Total Number of Samples							33	33	33	33	33	33	33	19	33	33	33	33	33	33	33	33	33
Maximum Value							41	25	52	92	29	400	LPQL	LPQL	LPQL	LPQL	220	640	LPQL	LPQL	LPQL	LPQL	0.6

Explanation:
1 - Site Assessment Criteria (SAC): NEPM 2013
2 - ABC Values for selected metals has been adopted from the published background concentrations presented in Olszowy et. al., (1995), Trace Element Concentrations in Soils from Rural and Urban New South Wales (the 25th percentile values for old suburbs with high traffic have been quoted)
3 - The average pH and CEC data for the top 2m soil profile was obtained from the salinity tables

Concentration above the SAC VALUE
The guideline corresponding to the elevated value is highlighted in grey in the EIL and ESL Assessment Criteria Table below

Abbreviations:

EILs: Ecological Investigation Levels	UCL: Upper Level Confidence Limit on Mean Value	LPQL: Less than PQL	NC: Not Calculated
B(a)P: Benzo(a)pyrene	ESLs: Ecological Screening Levels	SAC: Site Assessment Criteria	NSL: No Set Limit
PQL: Practical Quantitation Limit	NA: Not Analysed	NEPM: National Environmental Protection Measure	ABC: Ambient Background Concentration

EIL AND ESL ASSESSMENT CRITERIA

Land Use Category [1]				AREA OF ECOLOGICAL SIGNIFICANCE																		
							AGED HEAVY METALS-EILs						EILs		ESLs							
				pH [3]	CEC ($cmol_c/kg$) [3]	Clay Content (% clay)	Arsenic	Chromium	Copper	Lead	Nickel	Zinc	Naphthalene	DDT	C_6-C_{10} (F1)	>C_{10}-C_{16} (F2)	>C_{16}-C_{34} (F3)	>C_{34}-C_{40} (F4)	Benzene	Toluene	Ethylbenzene	Total Xylenes	B(a)P
PQL - Envirolab Services				-	1	-	4	1	1	1	1	1	0.1	0.1	25	50	100	100	0.2	0.5	1	3	0.05
Ambient Background Concentration (ABC) [2]				-	-	-	NSL	13	28	NSL	5	122	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL	NSL
Sample Reference	**Sample Depth**	**Sample Description**	**Soil Texture**																			
BH201	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH201	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH202	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH203	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH204	0-0.1	FILL: Sandy Silt	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH205	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH206	0.2-0.4	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH206	2.0-2.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH207	0.2-0.4	FILL: Silty Sand	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH207	1.2-1.4	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH207	2.8-3.0	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH208	0.2-0.4	FILL: Gravelly Silty Sand	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH208	0.2-0.4	FILL: Gravelly Silty Sand	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH208	1.6-2.0	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH208	3.6-4.0	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH209	0.1-0.2	FILL: Silty Sand	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH209	1.0-1.2	FILL: Silty Sand	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH209	3.6-3.8	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH210	0.1-0.4	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
BH210	1.0-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
BH210	1.9-2.1	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
TP221	0.1-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
TP222	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
TP223	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
TP224	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
TP225	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
TP225	0.7-0.8	FILL: Sandy Silt	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
TP225	1.1-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
TP225	1.1-1.3	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
TP226	0-0.2	FILL: Sandy Silt	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7
TP226	0.4-0.5	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
TP226	1.3-1.5	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	--	125	25	NSL	NSL	8	65	40	1.6	0.7
TP227	0-0.2	FILL: Silty Clay	Fine	6.4	16.5	NA	40	73	98	470	50	252	10	3	125	25	NSL	NSL	8	65	40	1.6	0.7

TABLE CG-1
SOIL INTRA-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = BH205 0-0.2	Arsenic	4	6	6	6.0	0
Dup Ref = DupJS1	Cadmium	0.4	LPQL	LPQL	NC	NC
	Chromium	1	13	13	13.0	0
Envirolab Report: 137123	Copper	1	20	15	17.5	29
	Lead	1	28	20	24.0	33
	Mercury	0.1	LPQL	LPQL	NC	NC
	Nickel	1	10	8	9.0	22
	Zinc	1	58	33	45.5	55
	Naphthalene	0.1	LPQL	LPQL	NC	NC
	Acenaphthylene	0.1	LPQL	LPQL	NC	NC
	Acenaphthene	0.1	LPQL	LPQL	NC	NC
	Fluorene	0.1	LPQL	LPQL	NC	NC
	Phenanthrene	0.1	LPQL	LPQL	NC	NC
	Anthracene	0.1	LPQL	LPQL	NC	NC
	Fluoranthene	0.1	LPQL	LPQL	NC	NC
	Pyrene	0.1	LPQL	LPQL	NC	NC
	Benzo(a)anthracene	0.1	LPQL	LPQL	NC	NC
	Chrysene	0.1	LPQL	LPQL	NC	NC
	Benzo(b,j+k)fluoranthene	0.2	LPQL	LPQL	NC	NC
	Benzo(a)pyrene	0.05	LPQL	LPQL	NC	NC
	Indeno(123-cd)pyrene	0.1	LPQL	LPQL	NC	NC
	Dibenzo(ah)anthracene	0.1	LPQL	LPQL	NC	NC
	Benzo(ghi)perylene	0.1	LPQL	LPQL	NC	NC
	Benzo(a)pyrene TEQ	0.5	LPQL	LPQL	NC	NC
	Total OCPs	0.1	LPQL	LPQL	NC	NC
	Total OPPs	0.1	LPQL	LPQL	NC	NC
	Total PCBs	0.1	LPQL	LPQL	NC	NC
	TRH C_6-C_{10} (F1)	25	LPQL	LPQL	NC	NC
	TRH >C_{10}-C_{16} (F2)	50	LPQL	LPQL	NC	NC
	TRH >C_{16}-C_{34} (F3)	100	LPQL	LPQL	NC	NC
	TRH >C_{34}-C_{40} (F4)	100	LPQL	LPQL	NC	NC
	Benzene	0.5	LPQL	LPQL	NC	NC
	Toluene	0.5	LPQL	LPQL	NC	NC
	Ethylbenzene	1	LPQL	LPQL	NC	NC
	m+p-xylene	2	LPQL	LPQL	NC	NC
	o-xylene	1	LPQL	LPQL	NC	NC

Explanation:

The RPD value is calculated as the absolute value of the difference between the initial and repeat results divided by the average value expressed as a percentage. The following acceptance criteria will be used to assess the RPD results:

- Results > 10 times PQL = RPD value <= 50% are acceptable
- Results between 5 & 10 times PQL = RPD value <= 75% are acceptable
- Results < 5 times PQL = RPD value <= 100% are acceptable

If result is LPQL then 50% of the PQL is used for the calculation

RPD Results Above the Acceptance Criteria — VALUE

Abbreviations:

PQL: Practical Quantitation Limit
LPQL: Less than PQL
NA: Not Analysed
NC: Not Calculated
OCP: Organochlorine Pesticides
OPP: Organophosphorus Pesticides
PCBs: Polychlorinated Biphenyls
TRH: Total Recoverable Hydrocarbons

TABLE CG-2
SOIL INTRA-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = BH215 0-0.2	Arsenic	4	8	8	8.0	0
Dup Ref = DupJS2	Cadmium	0.4	LPQL	LPQL	NC	NC
	Chromium	1	11	11	11.0	0
Envirolab Report: 137123	Copper	1	24	24	24.0	0
	Lead	1	24	28	26.0	15
	Mercury	0.1	LPQL	LPQL	NC	NC
	Nickel	1	13	13	13.0	0
	Zinc	1	86	87	86.5	1
	Naphthalene	0.1	LPQL	LPQL	NC	NC
	Acenaphthylene	0.1	LPQL	LPQL	NC	NC
	Acenaphthene	0.1	LPQL	LPQL	NC	NC
	Fluorene	0.1	LPQL	LPQL	NC	NC
	Phenanthrene	0.1	LPQL	LPQL	NC	NC
	Anthracene	0.1	LPQL	LPQL	NC	NC
	Fluoranthene	0.1	LPQL	LPQL	NC	NC
	Pyrene	0.1	LPQL	LPQL	NC	NC
	Benzo(a)anthracene	0.1	LPQL	LPQL	NC	NC
	Chrysene	0.1	LPQL	LPQL	NC	NC
	Benzo(b,j+k)fluoranthene	0.2	LPQL	LPQL	NC	NC
	Benzo(a)pyrene	0.05	LPQL	LPQL	NC	NC
	Indeno(123-cd)pyrene	0.1	LPQL	LPQL	NC	NC
	Dibenzo(ah)anthracene	0.1	LPQL	LPQL	NC	NC
	Benzo(ghi)perylene	0.1	LPQL	LPQL	NC	NC
	Benzo(a)pyrene TEQ	0.5	LPQL	LPQL	NC	NC
	Total OCPs	0.1	LPQL	LPQL	NC	NC
	Total OPPs	0.1	LPQL	LPQL	NC	NC
	Total PCBs	0.1	LPQL	LPQL	NC	NC
	TRH C6-C10 (F1)	25	LPQL	LPQL	NC	NC
	TRH >C10-C16 (F2)	50	LPQL	LPQL	NC	NC
	TRH >C16-C34 (F3)	100	LPQL	LPQL	NC	NC
	TRH >C34-C40 (F4)	100	LPQL	LPQL	NC	NC
	Benzene	0.5	LPQL	LPQL	NC	NC
	Toluene	0.5	LPQL	LPQL	NC	NC
	Ethylbenzene	1	LPQL	LPQL	NC	NC
	m+p-xylene	2	LPQL	LPQL	NC	NC
	o-xylene	1	LPQL	LPQL	NC	NC

Explanation:

The RPD value is calculated as the absolute value of the difference between the initial and repeat results divided by the average value expressed as a percentage. The following acceptance criteria will be used to assess the RPD results:

Results > 10 times PQL = RPD value <= 50% are acceptable
Results between 5 & 10 times PQL = RPD value <= 75% are acceptable
Results < 5 times PQL = RPD value <= 100% are acceptable
If result is LPQL then 50% of the PQL is used for the calculation

RPD Results Above the Acceptance Criteria VALUE

Abbreviations:

PQL: Practical Quantitation Limit
LPQL: Less than PQL
NA: Not Analysed
NC: Not Calculated
OCP: Organochlorine Pesticides
OPP: Organophosphorus Pesticides
PCBs: Polychlorinated Biphenyls
TRH: Total Recoverable Hydrocarbons

TABLE CG-3
SOIL INTRA-LABORATORY DUPLICATE RESULTS & RPD CALCULATIONS
All results in mg/kg unless stated otherwise

SAMPLE	ANALYSIS	Envirolab PQL	INITIAL	REPEAT	MEAN	RPD %
Sample Ref = TP221 0.1-0.2	Arsenic	4	11	9	10.0	20
Dup Ref = DupJS3	Cadmium	0.4	LPQL	LPQL	NC	NC
	Chromium	1	22	21	21.5	5
Envirolab Report: 137123	Copper	1	11	11	11.0	0
	Lead	1	25	25	25.0	0
	Mercury	0.1	LPQL	LPQL	NC	NC
	Nickel	1	4	5	4.5	22
	Zinc	1	27	29	28.0	7
	Naphthalene	0.1	LPQL	LPQL	NC	NC
	Acenaphthylene	0.1	LPQL	LPQL	NC	NC
	Acenaphthene	0.1	LPQL	LPQL	NC	NC
	Fluorene	0.1	LPQL	LPQL	NC	NC
	Phenanthrene	0.1	LPQL	LPQL	NC	NC
	Anthracene	0.1	LPQL	LPQL	NC	NC
	Fluoranthene	0.1	LPQL	LPQL	NC	NC
	Pyrene	0.1	LPQL	LPQL	NC	NC
	Benzo(a)anthracene	0.1	LPQL	LPQL	NC	NC
	Chrysene	0.1	LPQL	LPQL	NC	NC
	Benzo(b,j+k)fluoranthene	0.2	LPQL	LPQL	NC	NC
	Benzo(a)pyrene	0.05	LPQL	LPQL	NC	NC
	Indeno(123-cd)pyrene	0.1	LPQL	LPQL	NC	NC
	Dibenzo(ah)anthracene	0.1	LPQL	LPQL	NC	NC
	Benzo(ghi)perylene	0.1	LPQL	LPQL	NC	NC
	Benzo(a)pyrene TEQ	0.5	LPQL	LPQL	NC	NC
	Total OCPs	0.1	LPQL	LPQL	NC	NC
	Total OPPs	0.1	LPQL	LPQL	NC	NC
	Total PCBs	0.1	LPQL	LPQL	NC	NC
	TRH C6-C10 (F1)	25	LPQL	LPQL	NC	NC
	TRH >C10-C16 (F2)	50	LPQL	LPQL	NC	NC
	TRH >C16-C34 (F3)	100	LPQL	LPQL	NC	NC
	TRH >C34-C40 (F4)	100	LPQL	LPQL	NC	NC
	Benzene	0.5	LPQL	LPQL	NC	NC
	Toluene	0.5	LPQL	LPQL	NC	NC
	Ethylbenzene	1	LPQL	LPQL	NC	NC
	m+p-xylene	2	LPQL	LPQL	NC	NC
	o-xylene	1	LPQL	LPQL	NC	NC

Explanation:

The RPD value is calculated as the absolute value of the difference between the initial and repeat results divided by the average value expressed as a percentage. The following acceptance criteria will be used to assess the RPD results:

- Results > 10 times PQL = RPD value <= 50% are acceptable
- Results between 5 & 10 times PQL = RPD value <= 75% are acceptable
- Results < 5 times PQL = RPD value <= 100% are acceptable

If result is LPQL then 50% of the PQL is used for the calculation

RPD Results Above the Acceptance Criteria VALUE

Abbreviations:

PQL: Practical Quantitation Limit
LPQL: Less than PQL
NA: Not Analysed
NC: Not Calculated
OCP: Organochlorine Pesticides
OPP: Organophosphorus Pesticides
PCBs: Polychlorinated Biphenyls
TRH: Total Recoverable Hydrocarbons

TABLE CH
SUMMARY OF FIELD QA/QC RESULTS

ANALYSIS	Envirolab PQL		TB1[s]	TB2[w]	TB3[w]	TB4[w]	TB5[w]	FR1[W]	FR2[W]
			2/11/2015	3/11/2015	4/11/2015	5/11/2015	6/11/2015	3/11/2015	4/11/2015
	mg/kg	µg/L	137123	137123	137123	137123	137123	137123	137123
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Benzene	1	1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
Toluene	1	1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
Ethylbenzene	1	1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
m+p-xylene	2	2	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL
o-xylene	1	1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL

Explanation:
[W] Sample type (water)

Values above PQLs/Acceptance criteria **VALUE**

Abbreviations:

PQL: Practical Quantitation Limit
LPQL: Less than PQL
NA: Not Analysed
NC: Not Calculated
TB: Trip Blank
TS: Trip Spike
FR: Field Rinsate Sample
TRH: Total Recoverable Hydrocarbons

TABLE SA
SUMMARY OF SOIL LABORATORY RESULTS - EC and ECe

Borehole Number & Sample Depth	Sample Description	EC (µS/cm)	ECe (dS/m)	Salinity Class[1]
BH201_0.5-0.95	Silty Clay	240	1.68	Non-saline
BH201_3.5-4.0	Shale	610	5.49	Moderately Saline
BH202_1.5-1.95	Silty Clay	1300	10.4	Very Saline
BH202_2.5-3.0	Shale	560	7.84	Moderately Saline
BH203_0.5-0.95	Silty Clay	320	2.56	Slightly Saline
BH203_1.5-1.95	Shale	210	1.89	Non-saline
BH204_1.5-1.95	Silty Clay	1700	14.45	Very Saline
BH204_7.0-7.5	Shale	1000	8	Very Saline
BH204_8.5-9.0	Shale	1700	13.6	Very Saline
BH205_0.5-0.95	Silty Clay	1900	15.2	Very Saline
BH205_3.0-3.45	Silty Clay	1100	9.35	Very Saline
BH206_1.5-1.95	Fill: Silty Clay	370	3.145	Slightly Saline
BH206_4.0-4.5	Shale	900	8.1	Very Saline
BH206_7.0-7.5	Shale	680	6.12	Moderately Saline
BH207_0.5-0.95	Fill: Silty Clay	470	3.76	Slightly Saline
BH207_3.0-3.45	Fill: Silty Clay	420	3.57	Slightly Saline
BH207_6.0-6.45	Silty Clay	480	4.08	Moderately Saline
BH207_10-10.5	Shale	650	5.2	Moderately Saline
BH208_0.5-0.95	Fill: Gravelly Silty Sand	1200	10.2	Very Saline
BH208_4.5-4.95	Fill: Silty Clay	540	3.78	Slightly Saline
BH209_0.5-0.95	Fill: Silty Sand	380	3.23	Slightly Saline
BH209_3.0-3.45	Fill: Silty Sand	310	4.34	Moderately Saline
BH209_7.0-7.5	Shale	530	4.24	Moderately Saline
BH210_0.5-0.95	Fill: Silty Clay	1200	10.8	Very Saline
BH210_3.0-3.45	Shale	320	2.56	Slightly Saline
BH211_0.5-0.95	Fill: Silty Clay	86	0.774	Non-saline
BH212_0.5-0.95	Fill: Silty Clay	270	1.62	Non-saline
BH212_3.0-3.45	Silty Clay	220	1.32	Non-saline
BH212_5.5-6.0	Shale	290	2.32	Slightly Saline
BH213_1.5-1.95	Fill: Silty Clay	590	4.72	Moderately Saline
BH213_4.0-4.3	Sandstone	220	1.98	Non-saline
BH214_0.5-0.95	Fill: Silty Clay	640	3.84	Slightly Saline
BH214_3.0-3.15	Shale	860	6.88	Moderately Saline
BH215_0.5-0.95	Fill: Sandy Silt	260	2.08	Slightly Saline
BH215_4.5-4.95	Silty Clay	740	4.44	Moderately Saline
BH215_5.5-6.0	Shale	710	5.68	Moderately Saline
BH215_8.0-8.3	Shale	570	4.56	Moderately Saline
BH216_0.5-0.95	Fill: Silty Clay	280	2.24	Slightly Saline
BH217_0.5-0.95	Fill: Silty Clay	180	1.53	Non-saline
BH217_1.5-1.95	Silty Clay	580	3.48	Slightly Saline
BH218_0.5-0.95	Fill: Silty Clay	1000	8.5	Very Saline
BH218_3.0-3.45	Silty Clay	850	5.1	Moderately Saline
BH219_0.5-0.95	Silty Clay	1900	11.4	Very Saline
BH219_2.5-3.0	Shale	880	7.04	Moderately Saline
TP220_0.4-0.5	Fill: Silty Clay	240	1.44	Non-saline
TP221_0.1-0.2	Fill: Silty Clay	63	0.567	Non-saline
TP221_0.9-1.0	Silty Clay	1100	6.6	Moderately Saline
TP222_0.1-0.2	Fill: Silty Clay	51	0.714	Non-saline
TP222_0.9-1.0	Sandstone	86	0.688	Non-saline
TP223_0.1-0.2	Fill: Silty Clay	110	0.88	Non-saline
TP224_0.0-0.2	Fill: Silty Clay	660	5.94	Moderately Saline
TP225_1.1-1.3	Fill: Silty Clay	1000	8.5	Very Saline
TP226_0.4-0.5	Fill: Silty Clay	160	1.44	Non-saline
TP227_0.3-0.5	Silty Clay	1900	13.3	Very Saline
TP228_0.1-0.2	Fill: Sandy Silt	150	1.5	Non-saline
TP228_0.9-1.0	Fill: Silty Sand	350	2.8	Slightly Saline
TP229_0.0-0.1	Fill: Sandy Silt	110	1.54	Non-saline
TP229_1.1-1.3	Fill: Silty Clay	1300	11.7	Very Saline
TP225_0.4-0.5	Fill: Sandy Silt	390	3.12	Slightly Saline
TP226_0.8-1.0	Fill: Silty Clay	220	1.32	Non-saline
				Non-saline
Total Number of Samples		60	60	-
Minimum Value		51	0.567	-
Maximum Value		1900	15.2	-

Explanation
1 - Salinity Class has been adopted from '*Site Investigations for Urban Salinity* ' DLWC 2002.

ECe Values (dS/m)	Salinity Class
<2	Non-Saline
2 to 4	Slightly Saline
4 to 8	Moderately Saline
8 to 16	Very Saline
>16	Highly Saline

Abbreviations
EC - Electrical Conductivity
ECe - Extract Electrical Conductivity

TABLE SB
SUMMARY OF RESISTIVITY CALCULATION ON SOIL EC RESULTS

Borehole Number & Sample Depth	Sample Description	Resistivity[1] (ohm.cm)	Classification[2] Condition B
BH201_0.5-0.95	Silty Clay	4,200	Non-Aggressive
BH201_3.5-4.0	Shale	1,700	**Mildly Aggressive**
BH202_1.5-1.95	Silty Clay	770	**Moderately Aggressive**
BH202_2.5-3.0	Shale	1,800	**Mildly Aggressive**
BH203_0.5-0.95	Silty Clay	3,100	Non-Aggressive
BH203_1.5-1.95	Shale	4,800	Non-Aggressive
BH204_1.5-1.95	Silty Clay	570	**Moderately Aggressive**
BH204_7.0-7.5	Shale	970	**Moderately Aggressive**
BH204_8.5-9.0	Shale	600	**Moderately Aggressive**
BH205_0.5-0.95	Silty Clay	530	**Moderately Aggressive**
BH205_3.0-3.45	Silty Clay	910	**Moderately Aggressive**
BH206_1.5-1.95	Fill: Silty Clay	2,700	Non-Aggressive
BH206_4.0-4.5	Shale	1,100	**Mildly Aggressive**
BH206_7.0-7.5	Shale	1,500	**Mildly Aggressive**
BH207_0.5-0.95	Fill: Silty Clay	2,100	Non-Aggressive
BH207_3.0-3.45	Fill: Silty Clay	2,400	Non-Aggressive
BH207_6.0-6.45	Silty Clay	2,100	Non-Aggressive
BH207_10-10.5	Shale	1,500	**Mildly Aggressive**
BH208_0.5-0.95	Fill: Gravelly Silty Sand	820	**Moderately Aggressive**
BH208_4.5-4.95	Fill: Silty Clay	1,800	**Mildly Aggressive**
BH209_0.5-0.95	Fill: Silty Sand	2,600	Non-Aggressive
BH209_3.0-3.45	Fill: Silty Sand	3,300	Non-Aggressive
BH209_7.0-7.5	Shale	1,900	**Mildly Aggressive**
BH210_0.5-0.95	Fill: Silty Clay	820	**Moderately Aggressive**
BH210_3.0-3.45	Shale	3,100	Non-Aggressive
BH211_0.5-0.95	Fill: Silty Clay	12,000	Non-Aggressive
BH212_0.5-0.95	Fill: Silty Clay	3,700	Non-Aggressive
BH212_3.0-3.45	Silty Clay	4,500	Non-Aggressive
BH212_5.5-6.0	Shale	3,400	Non-Aggressive
BH213_1.5-1.95	Fill: Silty Clay	1,700	**Mildly Aggressive**
BH213_4.0-4.3	Sandstone	4,500	Non-Aggressive
BH214_0.5-0.95	Fill: Silty Clay	1,600	**Mildly Aggressive**
BH214_3.0-3.15	Shale	1,200	**Mildly Aggressive**
BH215_0.5-0.95	Fill: Sandy Silt	3,800	Non-Aggressive
BH215_4.5-4.95	Silty Clay	1,300	**Mildly Aggressive**
BH215_5.5-6.0	Shale	1,400	**Mildly Aggressive**
BH215_8.0-8.3	Shale	1,700	**Mildly Aggressive**
BH216_0.5-0.95	Fill: Silty Clay	3,600	Non-Aggressive
BH217_0.5-0.95	Fill: Silty Clay	5,600	Non-Aggressive
BH217_1.5-1.95	Silty Clay	1,700	**Mildly Aggressive**
BH218_0.5-0.95	Fill: Silty Clay	990	**Moderately Aggressive**
BH218_3.0-3.45	Silty Clay	1,200	**Mildly Aggressive**
BH219_0.5-0.95	Silty Clay	530	**Moderately Aggressive**
BH219_2.5-3.0	Shale	1,100	**Mildly Aggressive**
TP220_0.4-0.5	Fill: Silty Clay	4,100	Non-Aggressive
TP221_0.1-0.2	Fill: Silty Clay	16,000	Non-Aggressive
TP221_0.9-1.0	Silty Clay	940	**Moderately Aggressive**
TP222_0.1-0.2	Fill: Silty Clay	20,000	Non-Aggressive
TP222_0.9-1.0	Sandstone	12,000	Non-Aggressive
TP223_0.1-0.2	Fill: Silty Clay	9,000	Non-Aggressive
TP224_0.0-0.2	Fill: Silty Clay	1,500	**Mildly Aggressive**
TP225_1.1-1.3	Fill: Silty Clay	1,000	**Moderately Aggressive**
TP226_0.4-0.5	Fill: Silty Clay	6,100	Non-Aggressive
TP227_0.3-0.5	Silty Clay	520	**Moderately Aggressive**
TP228_0.1-0.2	Fill: Sandy Silt	6,500	Non-Aggressive
TP228_0.9-1.0	Fill: Silty Sand	2,900	Non-Aggressive
TP229_0.0-0.1	Fill: Sandy Silt	8,800	Non-Aggressive
TP229_1.1-1.3	Fill: Silty Clay	740	**Moderately Aggressive**
TP225_0.4-0.5	Fill: Sandy Silt	2,600	Non-Aggressive
TP226_0.8-1.0	Fill: Silty Clay	4,500	Non-Aggressive
Total Number of Samples		60	-
Minimum Value		520	-
Maximum Value		20,000	-

Explanation

1 - Resistivity values have been calculated on the laboratory EC values presented in Table B

2 - Classification derived from the Australian Standard 2159-2009 Piling Design and Installation (Table 6.5.2 [A] & [C])
Classification is based on Soil condition 'B' - low permeability soils (e.g. silts & clays) or all soils above groundwater.

Resistivity Values (ohm.cm)	Classification for Steel Piles
>5,000	**Non-Aggressive**
2,000 - 5,000	**Non-Aggressive**
1,000 - 2,000	**Mildly Aggressive**
<1,000	**Moderately Aggressive**

Abbreviations

EC - Electrical Conductivity

TABLE SC
SUMMARY OF SOIL LABORATORY RESULTS - pH

Borehole Number & Sample Depth	Sample Description	pH	Classification for Concrete Piles[1] Soil Condition B[2]	Classification for Steel Piles[1] Soil Condition B[2]
BH201_0.5-0.95	Silty Clay	4.3	Moderately Aggressive	Non-Aggressive
BH201_3.5-4.0	Shale	7.4	Non-Aggressive	Non-Aggressive
BH202_1.5-1.95	Silty Clay	4.6	Mildly Aggressive	Non-Aggressive
BH202_2.5-3.0	Shale	5	Mildly Aggressive	Non-Aggressive
BH203_0.5-0.95	Silty Clay	4.9	Mildly Aggressive	Non-Aggressive
BH203_1.5-1.95	Shale	7.3	Non-Aggressive	Non-Aggressive
BH204_1.5-1.95	Silty Clay	7.5	Non-Aggressive	Non-Aggressive
BH204_7.0-7.5	Shale	8.1	Non-Aggressive	Non-Aggressive
BH204_8.5-9.0	Shale	8.2	Non-Aggressive	Non-Aggressive
BH205_0.5-0.95	Silty Clay	7.5	Non-Aggressive	Non-Aggressive
BH205_3.0-3.45	Silty Clay	7.9	Non-Aggressive	Non-Aggressive
BH206_1.5-1.95	Fill: Silty Clay	5.5	Mildly Aggressive	Non-Aggressive
BH206_4.0-4.5	Shale	8.1	Non-Aggressive	Non-Aggressive
BH206_7.0-7.5	Shale	8.6	Non-Aggressive	Non-Aggressive
BH207_0.5-0.95	Fill: Silty Clay	5.1	Mildly Aggressive	Non-Aggressive
BH207_3.0-3.45	Fill: Silty Clay	7	Non-Aggressive	Non-Aggressive
BH207_6.0-6.45	Silty Clay	6.6	Non-Aggressive	Non-Aggressive
BH207_10-10.5	Shale	7.8	Non-Aggressive	Non-Aggressive
BH208_0.5-0.95	Fill: Gravelly Silty Sand	8.1	Non-Aggressive	Non-Aggressive
BH208_4.5-4.95	Fill: Silty Clay	6.5	Non-Aggressive	Non-Aggressive
BH209_0.5-0.95	Fill: Silty Sand	7.8	Non-Aggressive	Non-Aggressive
BH209_3.0-3.45	Fill: Silty Sand	8.1	Non-Aggressive	Non-Aggressive
BH209_7.0-7.5	Shale	8	Non-Aggressive	Non-Aggressive
BH210_0.5-0.95	Fill: Silty Clay	7.5	Non-Aggressive	Non-Aggressive
BH210_3.0-3.45	Shale	7.4	Non-Aggressive	Non-Aggressive
BH211_0.5-0.95	Fill: Silty Clay	6.6	Non-Aggressive	Non-Aggressive
BH212_0.5-0.95	Fill: Silty Clay	7.2	Non-Aggressive	Non-Aggressive
BH212_3.0-3.45	Silty Clay	6.1	Non-Aggressive	Non-Aggressive
BH212_5.5-6.0	Shale	7.1	Non-Aggressive	Non-Aggressive
BH213_1.5-1.95	Fill: Silty Clay	7.3	Non-Aggressive	Non-Aggressive
BH213_4.0-4.3	Sandstone	7.9	Non-Aggressive	Non-Aggressive
BH214_0.5-0.95	Fill: Silty Clay	7.2	Non-Aggressive	Non-Aggressive
BH214_3.0-3.15	Shale	6.3	Non-Aggressive	Non-Aggressive
BH215_0.5-0.95	Fill: Sandy Silt	7.3	Non-Aggressive	Non-Aggressive
BH215_4.5-4.95	Silty Clay	7.2	Non-Aggressive	Non-Aggressive
BH215_5.5-6.0	Shale	7.9	Non-Aggressive	Non-Aggressive
BH215_8.0-8.3	Shale	7.8	Non-Aggressive	Non-Aggressive
BH216_0.5-0.95	Fill: Silty Clay	7.2	Non-Aggressive	Non-Aggressive
BH217_0.5-0.95	Fill: Silty Clay	6.7	Non-Aggressive	Non-Aggressive
BH217_1.5-1.95	Silty Clay	5	Mildly Aggressive	Non-Aggressive
BH218_0.5-0.95	Fill: Silty Clay	6.4	Non-Aggressive	Non-Aggressive
BH218_3.0-3.45	Silty Clay	6.2	Non-Aggressive	Non-Aggressive
BH219_0.5-0.95	Silty Clay	4.3	Moderately Aggressive	Non-Aggressive
BH219_2.5-3.0	Shale	6.4	Non-Aggressive	Non-Aggressive
TP220_0.4-0.5	Fill: Silty Clay	6.4	Non-Aggressive	Non-Aggressive
TP221_0.1-0.2	Fill: Silty Clay	5.8	Non-Aggressive	Non-Aggressive
TP221_0.9-1.0	Silty Clay	4.6	Mildly Aggressive	Non-Aggressive
TP222_0.1-0.2	Fill: Silty Clay	5.4	Mildly Aggressive	Non-Aggressive
TP222_0.9-1.0	Sandstone	5.5	Mildly Aggressive	Non-Aggressive
TP223_0.1-0.2	Fill: Silty Clay	6.1	Non-Aggressive	Non-Aggressive
TP224_0.0-0.2	Fill: Silty Clay	4.4	Moderately Aggressive	Non-Aggressive
TP225_1.1-1.3	Fill: Silty Clay	7.2	Non-Aggressive	Non-Aggressive
TP226_0.4-0.5	Fill: Silty Clay	6.8	Non-Aggressive	Non-Aggressive
TP227_0.3-0.5	Silty Clay	7.4	Non-Aggressive	Non-Aggressive
TP228_0.1-0.2	Fill: Sandy Silt	6.1	Non-Aggressive	Non-Aggressive
TP228_0.9-1.0	Fill: Silty Sand	7.4	Non-Aggressive	Non-Aggressive
TP229_0.0-0.1	Fill: Sandy Silt	5.9	Non-Aggressive	Non-Aggressive
TP229_1.1-1.3	Fill: Silty Clay	6.2	Non-Aggressive	Non-Aggressive
TP225_0.4-0.5	Fill: Sandy Silt	7.6	Non-Aggressive	Non-Aggressive
TP226_0.8-1.0	Fill: Silty Clay	7.1	Non-Aggressive	Non-Aggressive
Total Number of Samples		60	-	-
Minimum Value		4.3	-	-
Maximum Value		8.6	-	-

Explanation

1 - pH Classification derived from the Australian Standard 2159-2009 Piling Design and Installation (Tables 6.4.2 [C] & 6.5.2 [C])

2 - Classification is based on Soil condition 'B' - low permeability soils (e.g. silts & clays) or all soils above groundwater.

pH Value	Classification for Concrete Piles	pH Value	Classification for Steel Piles
>5.5	Non-Aggressive	>5	Non-Aggressive
4.5 - 5.5	Mildly Aggressive	4.0 - 5.0	Non-Aggressive
4 - 4.5	Moderately Aggressive	3.0 - 4.0	Mildly Aggressive
<4	Severely Aggressive	<3	Moderately Aggressive

TABLE SD
SUMMARY OF SOIL LABORATORY RESULTS - SULPHATE & CHLORIDES

Borehole Number & Sample Depth	Sample Description	Sulphate (mg/kg)	Chloride (mg/kg)	Classification for Concrete Piles[1] SO4 - Soil Condition B[2]	Classification for Steel Piles[1] Cl - Soil Condition B[2]
BH201_0.5-0.95	Silty Clay	110	83	Non-Aggressive	Non-Aggressive
BH201_3.5-4.0	Shale	110	230	Non-Aggressive	Non-Aggressive
BH202_1.5-1.95	Silty Clay	220	920	Non-Aggressive	Non-Aggressive
BH202_2.5-3.0	Shale	120	280	Non-Aggressive	Non-Aggressive
BH203_0.5-0.95	Silty Clay	410	53	Non-Aggressive	Non-Aggressive
BH203_1.5-1.95	Shale	51	4	Non-Aggressive	Non-Aggressive
BH204_1.5-1.95	Silty Clay	160	1300	Non-Aggressive	Non-Aggressive
BH204_7.0-7.5	Shale	77	560	Non-Aggressive	Non-Aggressive
BH204_8.5-9.0	Shale	130	1300	Non-Aggressive	Non-Aggressive
BH205_0.5-0.95	Silty Clay	200	1100	Non-Aggressive	Non-Aggressive
BH205_3.0-3.45	Silty Clay	210	570	Non-Aggressive	Non-Aggressive
BH206_1.5-1.95	Fill: Silty Clay	10	250	Non-Aggressive	Non-Aggressive
BH206_4.0-4.5	Shale	66	400	Non-Aggressive	Non-Aggressive
BH206_7.0-7.5	Shale	54	260	Non-Aggressive	Non-Aggressive
BH207_0.5-0.95	Fill: Silty Clay	330	85	Non-Aggressive	Non-Aggressive
BH207_3.0-3.45	Fill: Silty Clay	160	63	Non-Aggressive	Non-Aggressive
BH207_6.0-6.45	Silty Clay	110	180	Non-Aggressive	Non-Aggressive
BH207_10-10.5	Shale	98	340	Non-Aggressive	Non-Aggressive
BH208_0.5-0.95	Fill: Gravelly Silty Sand	810	280	Non-Aggressive	Non-Aggressive
BH208_4.5-4.95	Fill: Silty Clay	48	230	Non-Aggressive	Non-Aggressive
BH209_0.5-0.95	Fill: Silty Sand	130	29	Non-Aggressive	Non-Aggressive
BH209_3.0-3.45	Fill: Silty Sand	37	23	Non-Aggressive	Non-Aggressive
BH209_7.0-7.5	Shale	40	240	Non-Aggressive	Non-Aggressive
BH210_0.5-0.95	Fill: Silty Clay	1200	50	Non-Aggressive	Non-Aggressive
BH210_3.0-3.45	Shale	29	46	Non-Aggressive	Non-Aggressive
BH211_0.5-0.95	Fill: Silty Clay	32	7	Non-Aggressive	Non-Aggressive
BH212_0.5-0.95	Fill: Silty Clay	38	9	Non-Aggressive	Non-Aggressive
BH212_3.0-3.45	Silty Clay	58	71	Non-Aggressive	Non-Aggressive
BH212_5.5-6.0	Shale	35	120	Non-Aggressive	Non-Aggressive
BH213_1.5-1.95	Fill: Silty Clay	150	44	Non-Aggressive	Non-Aggressive
BH213_4.0-4.3	Sandstone	29	34	Non-Aggressive	Non-Aggressive
BH214_0.5-0.95	Fill: Silty Clay	200	200	Non-Aggressive	Non-Aggressive
BH214_3.0-3.15	Shale	140	510	Non-Aggressive	Non-Aggressive
BH215_0.5-0.95	Fill: Sandy Silt	22	6	Non-Aggressive	Non-Aggressive
BH215_4.5-4.95	Silty Clay	91	450	Non-Aggressive	Non-Aggressive
BH215_5.5-6.0	Shale	84	280	Non-Aggressive	Non-Aggressive
BH215_8.0-8.3	Shale	60	230	Non-Aggressive	Non-Aggressive
BH216_0.5-0.95	Fill: Silty Clay	38	6	Non-Aggressive	Non-Aggressive
BH217_0.5-0.95	Fill: Silty Clay	58	18	Non-Aggressive	Non-Aggressive
BH217_1.5-1.95	Silty Clay	220	430	Non-Aggressive	Non-Aggressive
BH218_0.5-0.95	Fill: Silty Clay	380	390	Non-Aggressive	Non-Aggressive
BH218_3.0-3.45	Silty Clay	130	510	Non-Aggressive	Non-Aggressive
BH219_0.5-0.95	Silty Clay	290	1200	Non-Aggressive	Non-Aggressive
BH219_2.5-3.0	Shale	110	440	Non-Aggressive	Non-Aggressive
TP220_0.4-0.5	Fill: Silty Clay	78	28	Non-Aggressive	Non-Aggressive
TP221_0.1-0.2	Fill: Silty Clay	8	15	Non-Aggressive	Non-Aggressive
TP221_0.9-1.0	Silty Clay	190	580	Non-Aggressive	Non-Aggressive
TP222_0.1-0.2	Fill: Silty Clay	3	3	Non-Aggressive	Non-Aggressive
TP222_0.9-1.0	Sandstone	31	7	Non-Aggressive	Non-Aggressive
TP223_0.1-0.2	Fill: Silty Clay	10	9	Non-Aggressive	Non-Aggressive
TP224_0.0-0.2	Fill: Silty Clay	20	560	Non-Aggressive	Non-Aggressive
TP225_1.1-1.3	Fill: Silty Clay	740	180	Non-Aggressive	Non-Aggressive
TP226_0.4-0.5	Fill: Silty Clay	6	0	Non-Aggressive	Non-Aggressive
TP227_0.3-0.5	Silty Clay	170	1200	Non-Aggressive	Non-Aggressive
TP228_0.1-0.2	Fill: Sandy Silt	13	8	Non-Aggressive	Non-Aggressive
TP228_0.9-1.0	Fill: Silty Sand	44	14	Non-Aggressive	Non-Aggressive
TP229_0.0-0.1	Fill: Sandy Silt	11	22	Non-Aggressive	Non-Aggressive
TP229_1.1-1.3	Fill: Silty Clay	220	860	Non-Aggressive	Non-Aggressive
TP225_0.4-0.5	Fill: Sandy Silt	87	12	Non-Aggressive	Non-Aggressive
TP226_0.8-1.0	Fill: Silty Clay	54	4	Non-Aggressive	Non-Aggressive
Total Number of Samples		60	60	-	-
Minimum Value		3	0	-	-
Maximum Value		1200	1300	-	-

Explanation

1 - Classification derived from the Australian Standard 2159-2009 Piling Design and Installation (Tables 6.4.2 [C] & 6.5.2 [C])

2 - Classification is based on Soil condition 'B' - low permeability soils (e.g. silts & clays) or all soils above groundwater.

Sulphate (SO4) Values	Classification for Concrete Piles
<5,000	Non-Aggressive
5,000 - 10,000	Mildly Aggressive
10,000 - 20,000	Moderately Aggressive
>20,000	Severely Aggressive

Chloride (Cl) Values	Classification for Steel Piles
<5,000	Non-Aggressive
5,000 - 20,000	Non-Aggressive
20,000 - 50,000	Mildly Aggressive
>50,000	Moderately Aggressive

TABLE SE
SUMMARY OF SOIL LABORATORY RESULTS - CEC & ESP

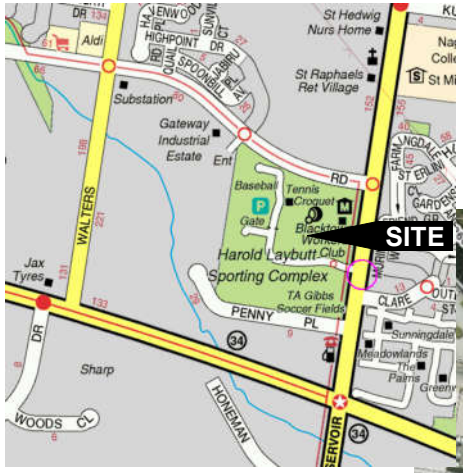
Borehole Number & Sample Depth	Sample Description	Total CEC	Ca	K	Mg	Na	ESP[1]
		(meq/100g)					%
BH201_0.5-0.95	Silty Clay	13	1.3	0.35	9.4	2.1	**16.2**
BH202_1.5-1.95	Silty Clay	14	0.15	0.44	11	2.5	**17.9**
BH203_0.5-0.95	Silty Clay	10	1.5	0.14	6.1	2.6	**26.0**
BH204_1.5-1.95	Silty Clay	11	0.66	0.27	7.1	2.9	**26.4**
BH205_0.5-0.95	Silty Clay	11	2.7	0.21	5.5	2.7	**24.5**
BH206_1.5-1.95	Fill: Silty Clay	11	2.1	0.23	6.7	1.8	**16.4**
BH207_0.5-0.95	Fill: Silty Clay	18	6.1	0.41	9.3	2.5	**13.9**
BH208_0.5-0.95	Fill: Gravelly Silty Sand	24	14	0.42	7.6	1.8	**7.5**
BH209_0.5-0.95	Fill: Silty Sand	35	28	0.43	4	2	**5.7**
BH210_0.5-0.95	Fill: Silty Clay	22	16	0.24	5.1	0.81	3.7
BH211_0.5-0.95	Fill: Silty Clay	8.8	4.5	0.08	3.6	0.58	**6.6**
BH212_0.5-0.95	Fill: Silty Clay	32	27	0.55	4.9	0.38	1.2
BH213_1.5-1.95	Fill: Silty Clay	15	8.9	0.16	2.8	2.8	**18.7**
BH214_0.5-0.95	Fill: Silty Clay	16	4.7	0.47	8.1	2.3	**14.4**
BH215_0.5-0.95	Fill: Sandy Silt	37	32	0.39	3.9	0.55	1.5
BH216_0.5-0.95	Fill: Silty Clay	38	32	0.43	5	0.7	1.8
BH217_0.5-0.95	Fill: Silty Clay	13	6.1	0.34	5.9	0.79	**6.1**
BH218_0.5-0.95	Fill: Silty Clay	14	6.1	0.24	5.9	2	**14.3**
BH219_0.5-0.95	Silty Clay	15	0.83	0.4	12	2	**13.3**
TP220_0.4-0.5	Fill: Silty Clay	16	7	0.34	7.4	1.2	**7.5**
TP221_0.1-0.2	Fill: Silty Clay	8.7	3.3	0.27	4.5	0.56	**6.4**
TP222_0.1-0.2	Fill: Silty Clay	10	7.6	0.13	2.6	0.2	2.0
TP223_0.1-0.2	Fill: Silty Clay	16	8.1	0.3	6.9	0.73	4.6
TP224_0.0-0.2	Fill: Silty Clay	6.6	2.1	0.18	4	0.35	**5.3**
TP226_0.4-0.5	Fill: Silty Clay	16	13	0.37	2.7	0.17	1.1
TP227_0.3-0.5	Silty Clay	9	1.1	0.09	4.9	2.9	**32.2**
TP228_0.1-0.2	Fill: Sandy Silt	13	9.9	0.6	2	0.2	1.5
TP229_0.0-0.1	Fill: Sandy Silt	9.4	5.6	0.58	2.9	0.31	3.3
TP225_0.4-0.5	Fill: Sandy Silt	17	8.7	0.37	6.2	2	**11.8**
Total Number of Samples		29	29	29	29	29	29
Minimum Value		6.60	0.15	0.08	2.00	0.17	1.06
Maximum Value		38.00	32.00	0.60	12.00	2.90	32.22

Explanation
1 - Sodicity rating has been adopted from the publication *'Site Investigations for Urban Salinity' DLWC* 2002.

ESP Value	Sodicity Rating
< 5%	**Non-Sodic**
5% to 15%	**Sodic**
> 15%	**Highly Sodic**

Abbreviation
CEC: Cation Exchange Capacity
ESP: Exchangeable Sodium Percentage (Each Na/CEC)
Mg: Exchangeable Magnesium
Na: Exchangeable Sodium
K: Exchangeable Potassium
Ca: Exchangeable Calcium

Appendix A: EIS 2015 - Stage 1 ESA Figures



SITE IDENTIFICATION:

Lots 200 & 201 in DP880404
Lot 14 in DP6796
Lots 14, 16 & 17 in DP809530
Lots 10 & 11 in DP818679

N

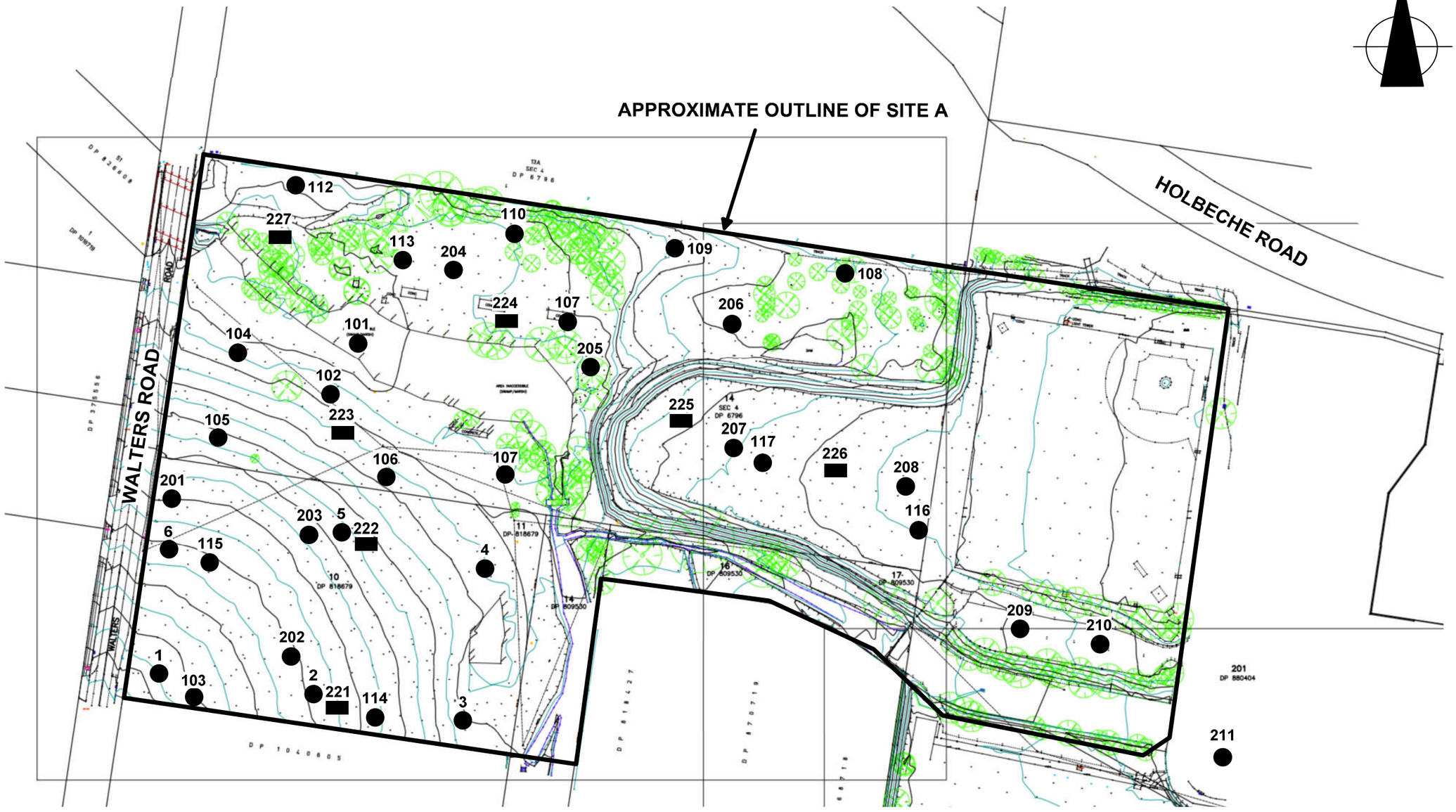
NOTES:
Figure 1 has been recreated from UBD on disc (version 5.0) and NSW Department of Lands SIX Maps. Figure is not to scale.

UBD Map ref: 188 F9, F10, G9, G10, H10 & H11

Reference should be made to the report text for a full understanding of this plan.

ENVIRONMENTAL INVESTIGATION SERVICES

Project Number:	Title:
E28870KB	SITE LOCATION PLAN
Figure: 1	Address: 170 RESERVOIR ROAD, ARNDELL PARK, NSW 2148



LEGEND

- Boreholes 201 - 211 from our current geotechnical investigation
- Test Pit 221 - 227 from our current geotechnical investigation
- Boreholes 1 - 6 from our previous geotechnical investigation report (Ref: 25295ZR) dated 7 November 2011
- Boreholes 101 - 117 from Brink & Associates geotechnical investigation report (Ref: S06160-A TV:MC) dated 1 February 2007

Scale (m): 0 100

ENVIRONMENTAL INVESTIGATION SERVICES

Title: **SITE A - TEST LOCATION PLAN**

Report Number: **E28870KB**

Figure Number: **2A**

LEGEND

- Borehole
- Test Pit

Scale (m): 0 — 100	ENVIRONMENTAL INVESTIGATION SERVICES		
Title: **SITE B - TEST LOCATION PLAN**		Report Number: **E28870KB**	Figure Number: **2B**

Appendix B: Report Figures by Others

HOLBECHE ROAD

EXISTING BASEBALL PITCH

PROPOSED BOWLING GREEN

EXISTING SHED

PROPOSED BOWLING GREEN

PROPOSED BOWLING GREEN

BH7

BH4

BH13

BH8

AH 2

AH 3

EXISTING BOWLING GREEN A

PROPOSED MOTEL

BH3

EXISTING TENNIS COURTS

BH6

BH9

AH 1

EXISTING BUILDING

EXISTING BOWLING GREEN B

AH 4

BH2

BH12

BH15

PROPOSED TENNIS COURTS

BH14

BH11

BH10

AH 6

AH 5

PROPOSED CLUB

EXISTING BITUMEN CARPARK

BH1

EXISTING MAINTENENCE BUILDINGS

BH5

ROAD

EXISTING ACCESS ROAD

RESERVOIR

ROAD

60 61 62 63 64 65 66 67 68 59 58

LEGEND

DENOTES BOREHOLE LOCATION (TRUCK MOUNTED DRILL RIG)

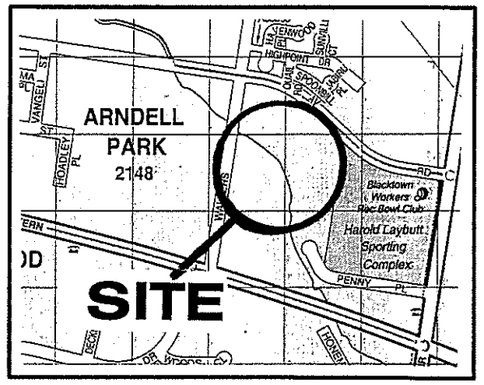
DENOTES HAND AUGER BOREHOLE LOCATION

0 10 20 30 40 50

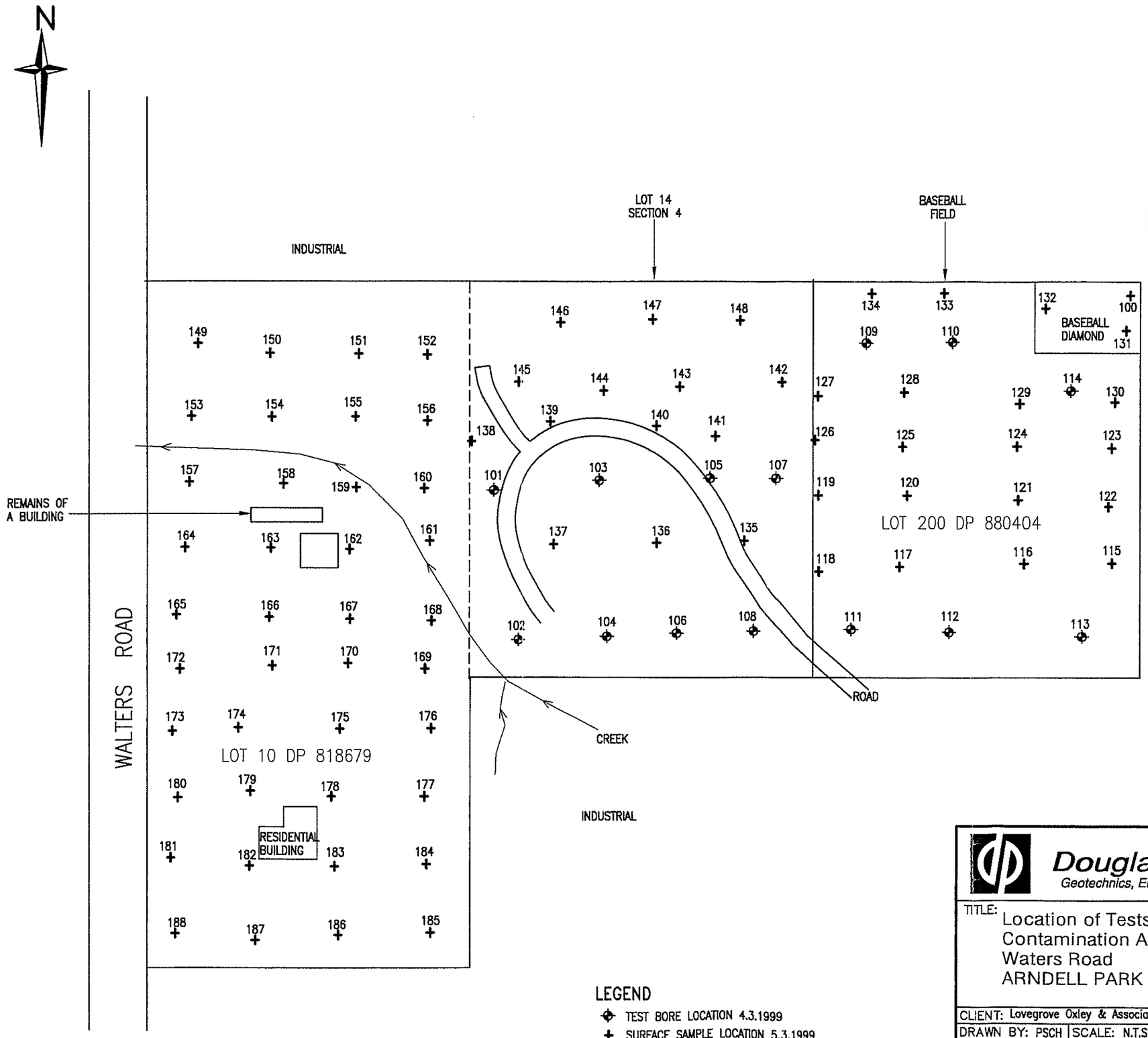
SCALE (m)

Golder Associates

Drawn: RL	Date: 22.5.97	PAYNTER DIXON PTY LTD BLACKTOWN WORKERS CLUB RESERVOIR RD., BLACKTOWN BOREHOLE LOCATION PLAN	
Checked: SL	Date: 16·6·97		
Revision:	Date:		
Scale: AS SHOWN	A3	Project No.: 97621082	Drg No.: 721082/2B



LOCALITY PLAN



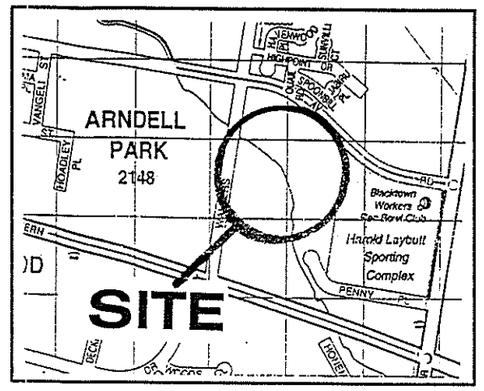
Douglas Partners
Geotechnics, Environmental, Groundwater

Sydney, Newcastle, Brisbane, Melbourne, Perth, Wyong, Singleton, Campbelltown, Townsville, Cairns, Wollongong

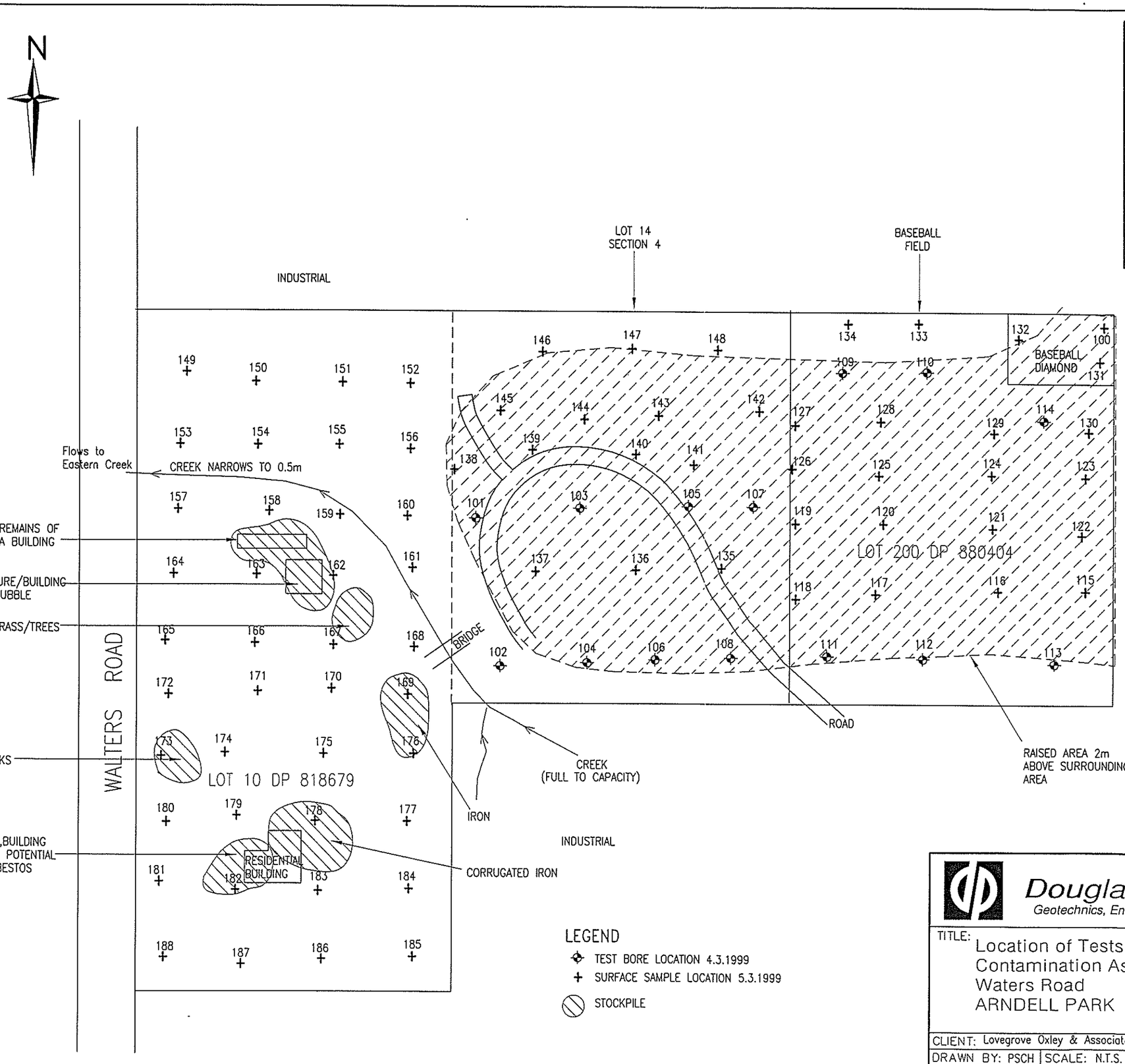
TITLE: Location of Tests
Contamination Assessment
Waters Road
ARNDELL PARK

PSC Liability is limited by the Professional Engineers Scheme

CLIENT: Lovegrove Oxley & Associates			
DRAWN BY: PSCH	SCALE: N.T.S.	PROJECT No: 24192C	OFFICE: SYDNEY
APPROVED BY:		DATE: 4.3.1999	DRAWING No: 1



LOCALITY PLAN

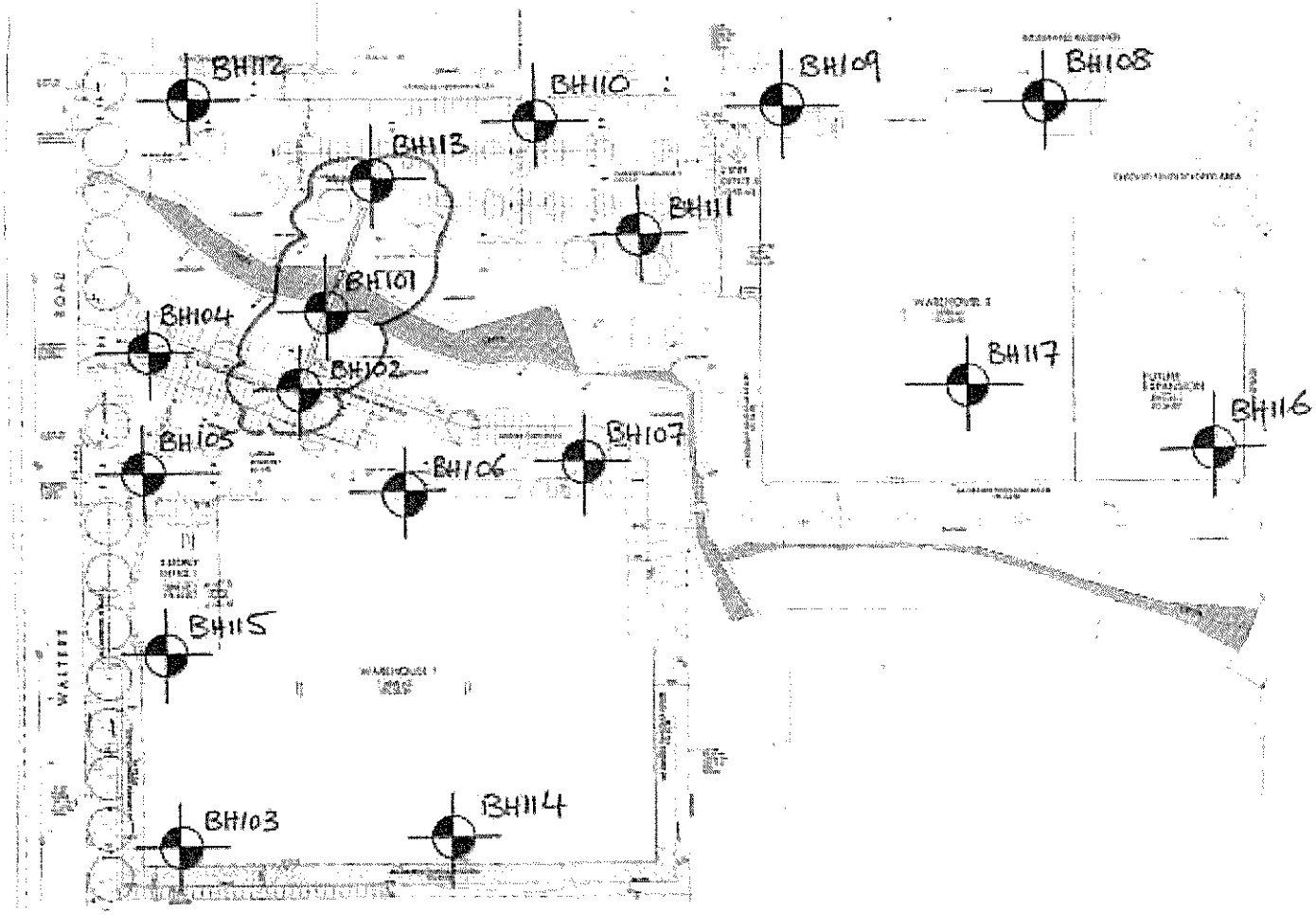


Douglas Partners
Geotechnics, Environmental, Groundwater

Sydney, Newcastle, Brisbane, Melbourne, Perth, Wyong, Singleton, Campbelltown, Townsville, Cairns, Wollongong

TITLE: Location of Tests
Contamination Assessment
Waters Road
ARNDELL PARK

CLIENT: Lovegrove Oxley & Associates			
DRAWN BY: PSCH	SCALE: N.T.S.	PROJECT No: 24192C	OFFICE: SYDNEY
APPROVED BY:		DATE: 31.8.2004	DRAWING No: 2



LEGEND

Approximate Borehole Location

BRINK & ASSOCIATES
Geotechnical, Geological, Environmental
Consulting Engineers and Scientists

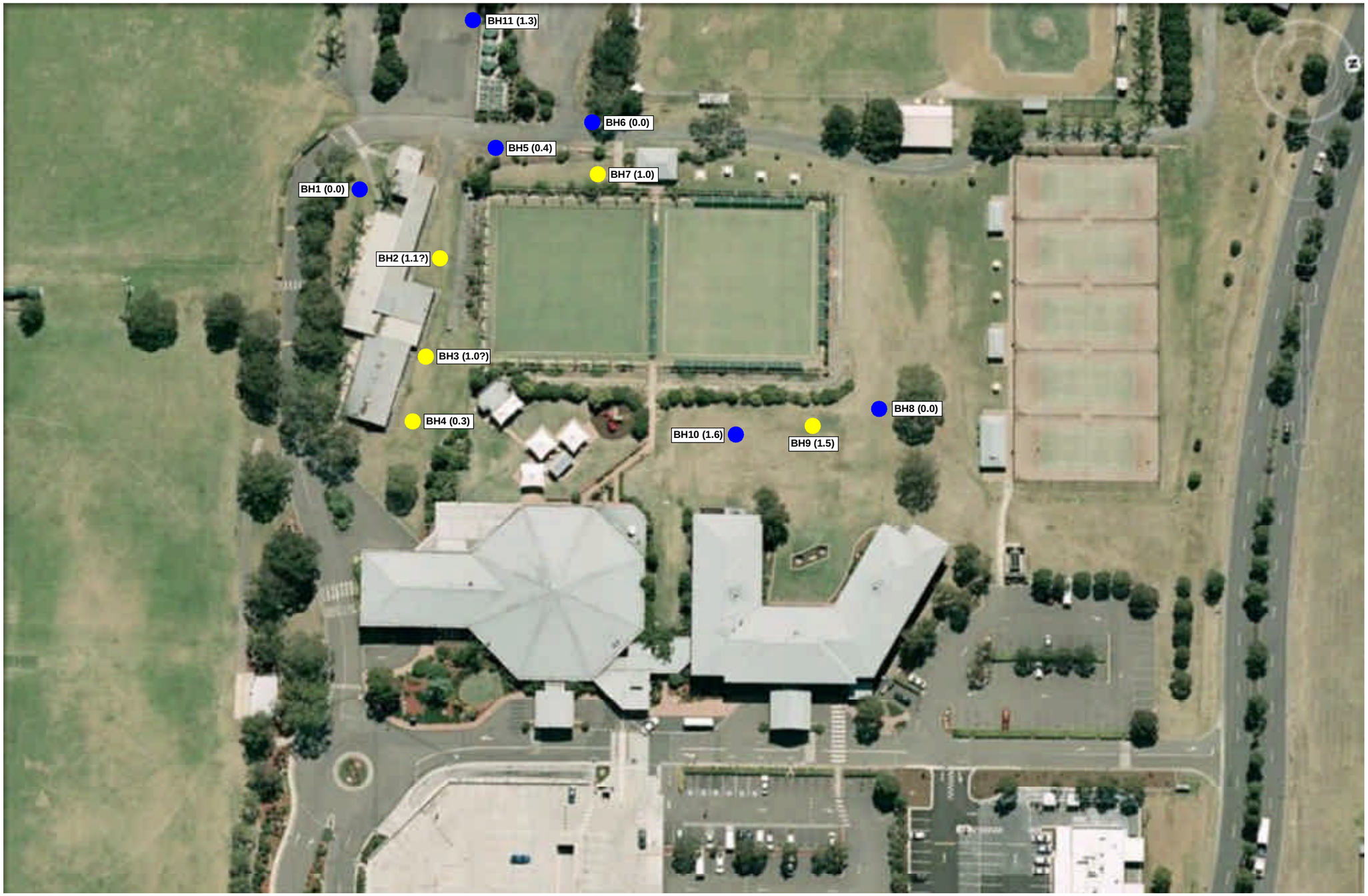
P.O. Box 6871
WETHERILL PARK NSW 2164
Ph: (02) 9609 3800
Fax: (02) 9604 6427

SCALE:
N.T.S

DRAWING NO:
S06160-1

PAYNTER DIXON CONSTRUCTIONS PTY LTD
PROPOSED COMMERCIAL DEVELOPMENT
BLACKTOWN WORKERS CLUB
WALTERS ROAD,
ARNDELL PARK

SITE PLAN



N

LEGEND:

BH1 (0.2) **Geotechnical borehole location, number and depth of fill (m)**

BH1 (0.2) **Geotechnical and environmental borehole location, number and depth of fill (m)**

NOTES:
Figure 2 has been recreated from Google Earth.

The borehole locations presented on this plan have been established from site measurements only and should not be construed as survey points.

Reference should be made to the report text for a full understanding of this plan.

Approximate Scale (m): 0 10 20 30 40 50

ENVIRONMENTAL INVESTIGATION SERVICES

Project Number:	Title:
E26564K	BOREHOLE LOCATION PLAN
Figure: 2	Address: 170 RESERVOIR ROAD, BLACKTOWN, NSW

Appendix C: Site Information including Site History

Proposed Development Concept Plan

NOTES

* BOUNDARY DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT LPI. NSW AND ARE SUBJECT TO FINAL SURVEY.
* CONTOURS IF SHOWN ARE AN INDICATION OF THE TOPOGRAPHY AND SHOULD ONLY BE USED FOR PLANNING PURPOSES. IF DETAILED DESIGN IS TO BE UNDERTAKEN, SPOT LEVELS SHOULD BE USED.
* DO NOT SCALE OFF THIS PLAN – RELATIONSHIP OF IMPROVEMENTS AND DETAIL TO BOUNDARIES IS DIAGRAMMATIC AND IF CRITICAL SHOULD BE CONFIRMED BY A BOUNDARY SURVEY.
* NO SERVICES SEARCH HAS BEEN UNDERTAKEN. SERVICES SHOWN ARE BASED ON SURFACE INDICATORS EVIDENT AT THE DATE OF SURVEY DURING FIELD SURVEY & CHARTED AS A GUIDE TO THE POSITION & NATURE OF THE SERVICE.
* THE POSITIONS OF ANY UNDERGROUND SERVICES, INCLUDING FIBRE OPTIC CABLE, HAVE NOT BEEN DETERMINED.
* NO "DIAL BEFORE YOU DIG" SEARCH HAS BEEN UNDERTAKEN. CONTACT "DIAL BEFORE YOU DIG" ON Ph: 1100 PRIOR TO COMMENCING WORK ON SITE.

NOTE:

THESE PLANS SHOULD BE READ IN CONJUNCTION WITH DIGITAL DATA ISSUED TO CLIENT. THE DIGITAL DATA CONTAINS NUMEROUS LAYERS OF INFORMATION WHICH ARE NOT SHOWN ON THESE PLANS FOR THE SAKE OF CLARITY.

NO CADASTRAL SURVEY HAS BEEN UNDERTAKEN TO CONFIRM THE LOCATION AND DIMENSION OF THE PROPERTY BOUNDARIES. SHOULD CONSTRUCTION BE PLANNED CLOSE TO THE PROPERTY BOUNDARIES, IT IS CRITICAL THAT A CADASTRAL SURVEY BE COMPLETED FIRST.

0 25 50 75 100 125m

1 : 1250

LJMc

CLIENT

PAYNTER DIXON

PROJECT

DETAIL SURVEY
OF
LOT 201 IN DP 880404

BLACKTOWN WORKERS SPORTS CLUB
RESERVOIR ROAD, BLACKTOWN

NOTES

The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.
Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.
Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

PPP/CF	LPL	DD/MM/YY	COMMENT

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.

LANDPARTNERS
built environment consultants

Sydney Office
Level 2, 23-29 South Street
Rydalmere NSW 2116
PO Box 1144
Dundas NSW 2117

t (02) 9685 2000
f (02) 9685 2001
e sydney@landpartners.com.au
w www.landpartners.com.au

ISO 9001:2008
FS 535063

HEIGHT DATUM: AHD	LOCAL AUTHORITY: BLACKTOWN COUNCIL
HEIGHT ORIGIN: SSM 116395 RL 64.178	SCALE: 1:1250 (A1)
MERIDIAN: 56	CONTOUR INTERVAL: 0.5 Metre
CO-ORD SYSTEM: MGA	SURVEYOR: MC,AG &GP — DATE OF SURVEY: 26/10/15
CCAD FILE: SY073782.000	DRAWN: LJMc — DATE: 29/10/15
AUTOCAD FILE: SY073782.000	CHECKED: MC — DATE: 29/10/15
ARCHIVE FILE: SY073782.000	APPROVED: GKO — DATE: 29/10/15

PLAN NUMBER

SY073782.000

20m OFFSET FROM TOP of BANK (based off 2004 survey)

10m OFFSET FROM TOP of BANK (based off 2004 survey)

20m OFFSET FROM TOP of BANK (based off 2004 survey)

190

40

150

SPORTS FACILITY

CHILD CARE

BUILDING 8 (4+2+5)

BUILDING 9 (4+2)

BUILDING 6 (4+2)

BUILDING 5 (4+2)

BUILDING 4 (4)

BUILDING 1 (3+1)

BUILDING 10 (4+4+5)

RACF (6)

BUILDING 7 (6+1)

BUILDING 3 (8)

BUILDING 2 (3+2)

RESERVOIR ROAD

PENNY PLACE

CIRCULATION KEY

- MAINTENANCE (BUGGIES) + PEDESTRIAN
- BASEMENT CARPARK LINK FOR RESIDENTS
- PUBLIC ROADS
- VISITOR + SERVICE ROAD FOR ILUs + SCE

Blacktown Sports Club Masterplan

PLANNING DIAGRAM | CIRCULATION | 15029 | 1:200 at A3 | 11/11/2015

NORTH

15029_SK890.dgn

AJ+C
Allen Jack+Cottier
79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

20m OFFSET FROM TOP of BANK (based off 2004 survey)

10m OFFSET FROM TOP of BANK (based off 2004 survey)

20m OFFSET FROM TOP of BANK (based off 2004 survey)

190

40

150

SPORTS FACILITY

CHILD CARE

BUILDING 8 (4+2+5)

BUILDING 9 (4+2)

BUILDING 6 (4+2)

BUILDING 5 (4+2)

BUILDING 4 (4)

BUILDING 1 (3+1)

BUILDING 10 (4+4+5)

RACF (6)

BUILDING 7 (6+1)

BUILDING 3 (8)

BUILDING 2 (3+2)

RESERVOIR ROAD

PENNY PLACE

FENCING + ACCESS KEY

1.8m SOLID FENCING

1m SEASONAL PERIMETER FENCE

ACCESS GATES (1 ONLY WHEN TICKETED)

Blacktown Sports Club Masterplan

PLANNING DIAGRAM

FENCING + ACCESS

15029

1:200 at A3

11/11/2015

NORTH

15029_SK891.dgn

AJ+C
Allen Jack+Cottier
79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

20m OFFSET FROM TOP of BANK (based off 2004 survey)

10m OFFSET FROM TOP of BANK (based off 2004 survey)

20m OFFSET FROM TOP of BANK (based off 2004 survey)

190

40

150

SPORTS FACILITY

CHILD CARE

BUILDING 8 (4+2+5)

BUILDING 9 (4+2)

BUILDING 6 (4+2)

BUILDING 5 (4+2)

BUILDING 4 (4)

BUILDING 1 (3+1)

BUILDING 10 (4+4+5)

RACF (6)

BUILDING 7 (6+1)

BUILDING 3 (8)

BUILDING 2 (3+2)

RESERVOIR ROAD

PENNY PLACE

LEVELS KEY

BATTERING ZONE

RETAINING WALL

Blacktown Sports Club Masterplan

PLANNING DIAGRAM

LEVELS + BATTERING

15029

1:200 at A3

11/11/2015

NORTH

AJ+C
Allen Jack+Cottier
79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

15029_SK892.dgn

20m OFFSET FROM TOP of BANK (based off 2004 survey)

10m OFFSET FROM TOP of BANK (based off 2004 survey)

20m OFFSET FROM TOP of BANK (based off 2004 survey)

190

40

150

Blacktown Sports Club Masterplan

PLANNING DIAGRAM

BASEMENT CARPARKING

15029

1:200 at A3

11/11/2015

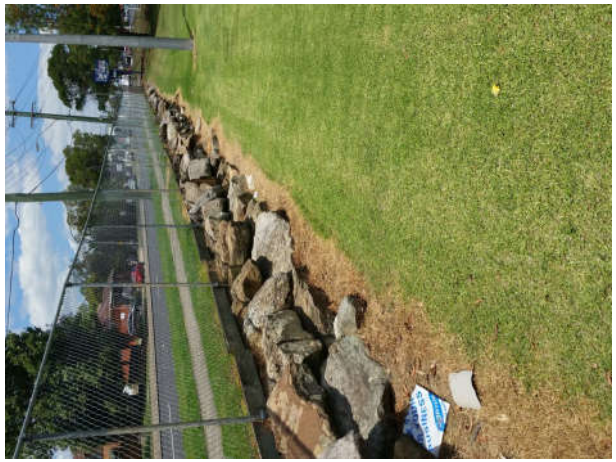
NORTH

AJ+C
Allen Jack+Cottier
79 Myrtle Street Chippendale NSW 2008 AUSTRALIA
ph +61 2 9311 8222 fx +61 2 9311 8200 ABN 53 003 782 250

15029_SK893.dgn

Selected Site Photos of 2 November 2015



















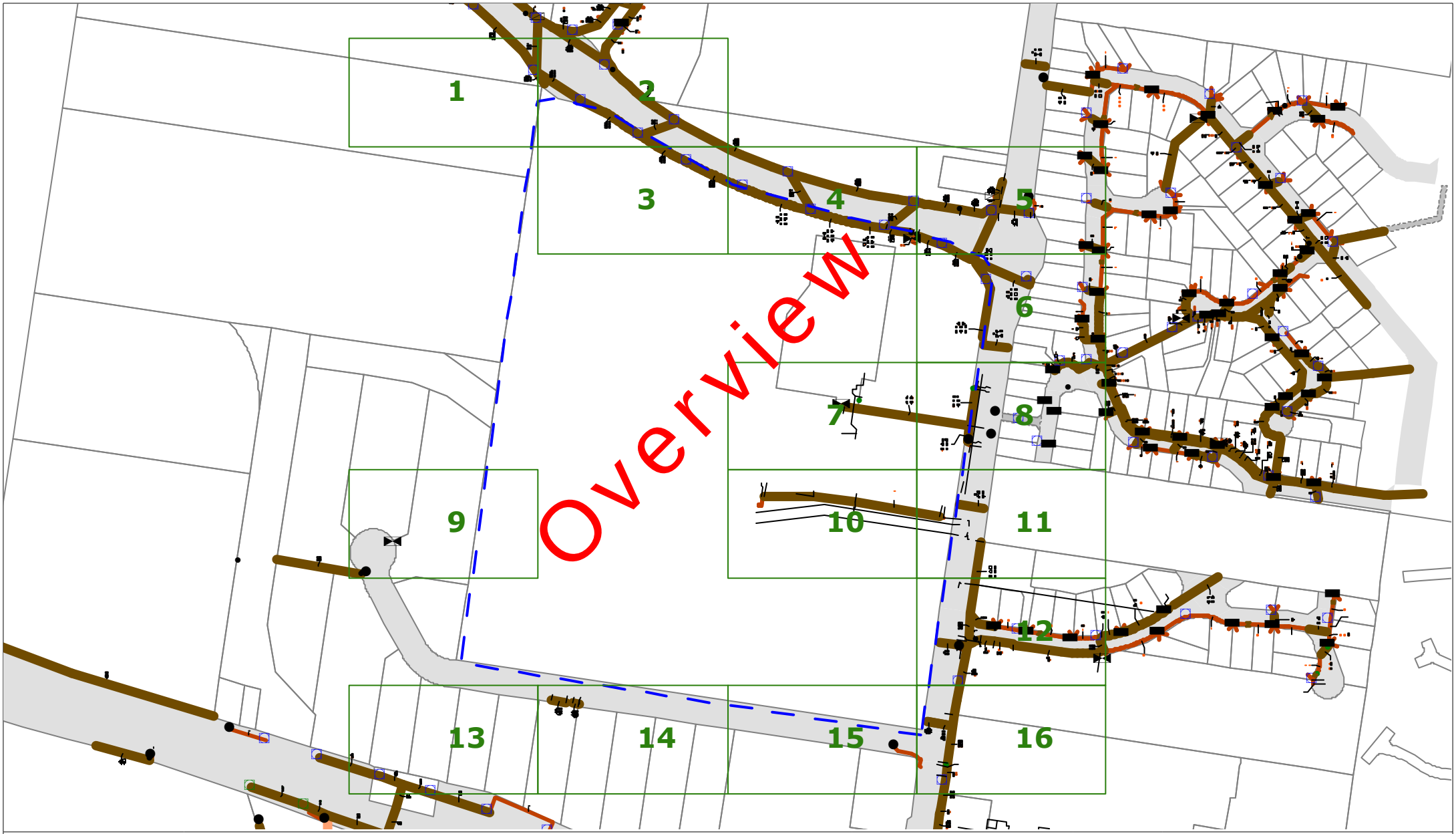



PHOENIX



NO ENTRY

Selected Services Plans



Endeavour Energy

WARNING
ASBESTOS

ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid, and has been prepared solely for Endeavour Energy's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is accurate as possible but will accept no liability for inaccuracies in the information shown on such plans from any cause whatsoever arising. Persons excavating are expected to exercise all due care in the vicinity where cables are indicated and will be held responsible for any damage caused to Endeavour Energy's property.

ALL ELECTRICAL APPARATUS SHALL BE CONSIDERED LIVE UNTIL PROVED DE-ENERGISED.
Contact with live electrical apparatus will cause severe injury or death.

Those excavating near Endeavour Energy's cables should be aware that **ASBESTOS OR ASBESTOS - CONTAINING MATERIAL MAY BE PRESENT** in Endeavour Energy's underground assets and that Organo-Chloride Pesticides(OCP) may be present in some sub-transmission trenches

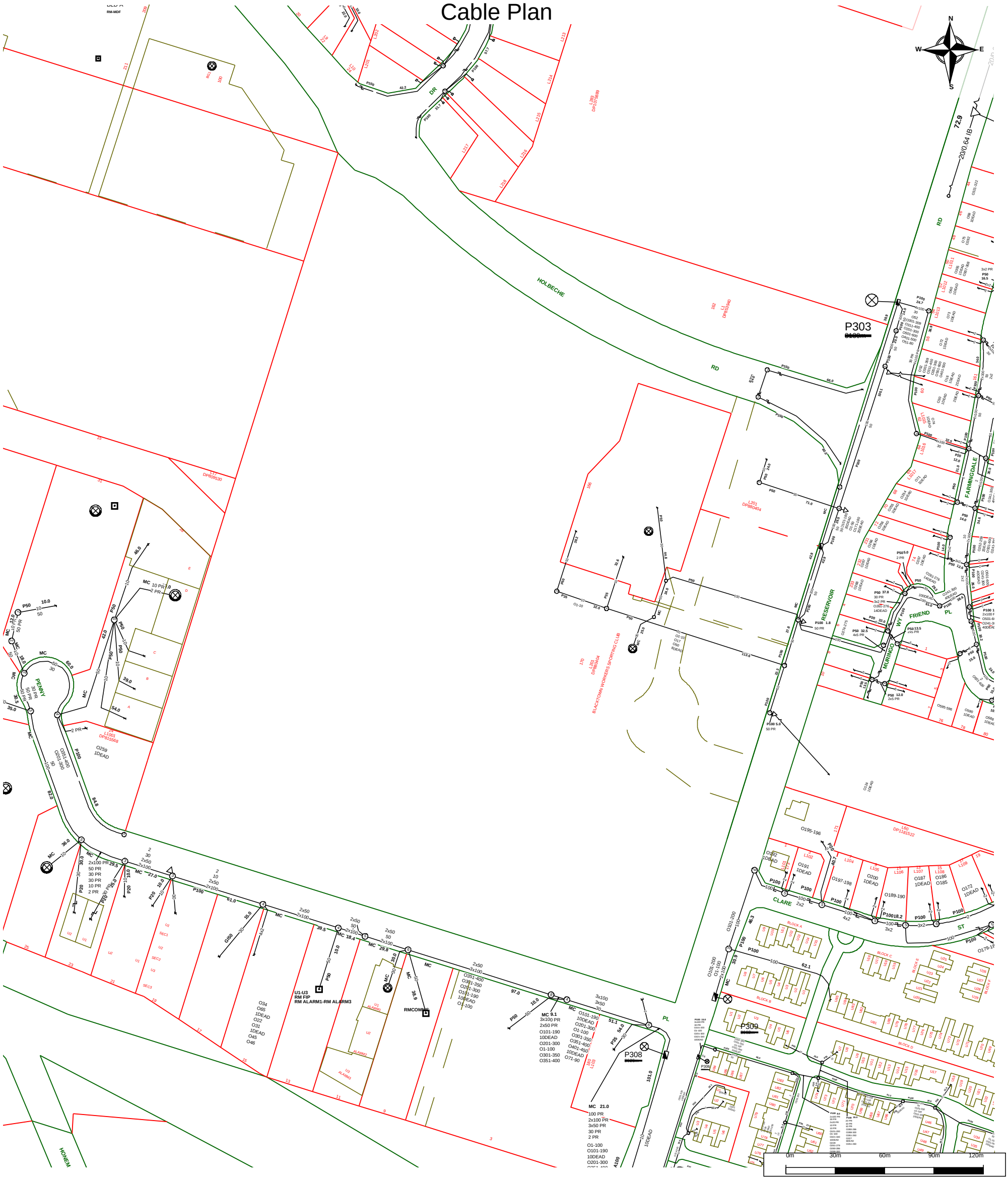
WARNING
THIS EXCAVATION IS IN THE VICINITY OF ENDEAVOUR ENERGY TRANSMISSION, PILOT, COMMUNICATION OR FIBRE OPTIC CABLES
PLEASE RING **9853 7121** or **MOB. 0407 468 626**
4 WORKING DAYS BEFORE COMMENCING WORK

N

DO NOT SCALE

DBYD Sequence Number:	48713422
Issued Date:	26/10/2015

Cable Plan



Telstra

For all Telstra DBYD plan enquiries -
email - Telstra.Plans@team.telstra.com
For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

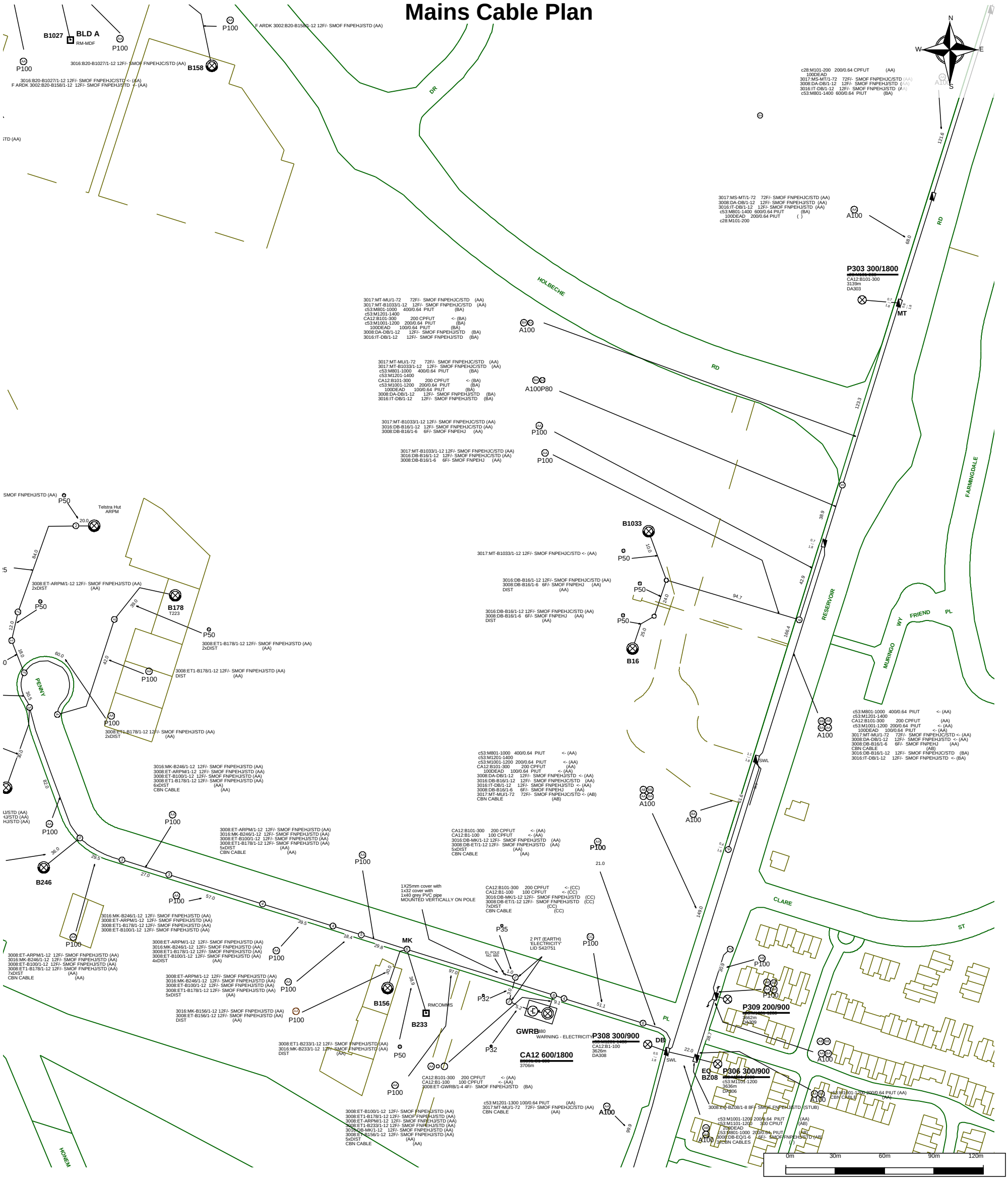
Generated On 26/10/2015 09:07:25

Sequence Number: 48713423

CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

Mains Cable Plan



Telstra	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)
TELSTRA CORPORATION LIMITED A.C.N. 051 775 556	
Generated On 26/10/2015 09:07:44	Sequence Number: 48713423
	CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.

It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

Lotsearch Records

Lotsearch

Environmental Risk and Planning Report

170 Reservoir Road, Arndell Park, NSW 2148

Report Buffer: 1000m

Report Date: 27 Oct 2015 10:52:16

Table of Contents

Location Confidences

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

LC Code	Location Confidence
1	Geocoded to the site location or part of site
2	Geocoded with the confidence of the general/wider area
3	Geocoded to the road or rail
4	Geocoded to the road intersection
5	Feature is a buffered point
6	Land adjacent to Geocoded Site
7	Geocoded to a network of features

Dataset Listing

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

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features in Buffer
Cadastre Boundaries	Land and Property Information	08/10/2014	08/10/2014	As required	-	-	-
Topographic Data	Land and Property Information	10/04/2015	01/04/2015	As required	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	21/10/2015	18/09/2015	Monthly	1	1	4
Contaminated Land: Records of Notice	Environment Protection Authority	21/10/2015	21/10/2015	Monthly	0	0	0
Former Gasworks	Environment Protection Authority	21/10/2015	10/05/2013	Monthly	0	0	0
National Waste Management Site Database	Geoscience Australia	21/10/2015	15/11/2012	Quarterly	0	0	0
UPSS Environmentally Sensitive Zones	Department of Environment, Climate Change and Water (NSW)	14/04/2015	12/01/2010	As required	0	0	1
Licensed Activities under the POEO Act 1997	Environment Protection Authority	21/10/2015	21/10/2015	Monthly	0	0	4
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	21/10/2015	21/10/2015	Monthly	0	0	1
Former POEO Licenced Activities now revoked or surrendered	Environment Protection Authority	21/10/2015	21/10/2015	Monthly	3	3	5
UBD Business Directory 1991	Universal Publishers Pty Ltd			Not required	0	3	3
UBD Business Directory 1970	Universal Publishers Pty Ltd			Not required	0	0	0
UBD Business Directory 1970 Drycleaners	Universal Publishers Pty Ltd			Not required	0	0	0
UBD Business Directory 1950	Universal Publishers Pty Ltd			Not required	3	3	3
UBD Business Directory 1950 Drycleaners	Universal Publishers Pty Ltd			Not required	0	0	0
Points of Interest	Land and Property Information	10/04/2015	01/04/2015	As required	7	7	34
Tanks (Areas)	Land and Property Information	10/04/2015	01/04/2015	As required	0	0	0
Tanks (Points)	Land and Property Information	10/04/2015	01/04/2015	As required	0	0	0
Easements	Land and Property Information	08/10/2014	08/10/2014	As required	0	1	7
State Forest	Land and Property Information	12/08/2015	22/01/2015	As required	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment and Heritage	10/08/2015	31/03/2015	Quarterly	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1	1	1
Groundwater Boreholes	NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation; Commonwealth of Australia (Bureau of Meteorology) 2015	10/09/2015	08/09/2015	Quarterly	0	3	6
Geological Units 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	1	-	1
Geological Structures 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	0	-	0
Soil Landscapes	NSW Office of Environment and Heritage	12/08/2014		None planned	2	0	2
Acid Sulfate Soils	NSW Planning and Environment	19/06/2014	11/09/2013	Quarterly	0	-	-
Dryland Salinity Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1	1	1
Mining Subsidence Districts	Land and Property Information	08/10/2014	08/10/2014	As required	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	01/07/2014	24/10/2008	Annually	0	0	0
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	01/07/2014	01/01/1986	Annually	0	0	0
SEPP 71 - Coastal Protection	NSW Planning and Environment	01/07/2014	30/11/2005	Annually	0	0	0
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features in Buffer
SEPP Strategic Land Use Areas	NSW Planning and Environment	04/05/2015	01/05/2015	Annually	0	0	0
Local Environmental Plan - Land Zoning	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	7	11	56
Local Environmental Plan - Minimum Subdivision Lot Size	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	1	-	-
Local Environmental Plan - Height of Building	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	0	-	-
Local Environmental Plan - Floor Space Ratio	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	0	-	-
Local Environmental Plan - Land Application	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	1	-	-
Local Environmental Plan - Land Reservation Acquisition	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	0	-	-
State Heritage Items	NSW Planning and Environment	26/10/2015	12/03/2015	Quarterly	0	0	2
Local Heritage Items	NSW Planning and Environment	26/10/2015	23/10/2015	Weekly	0	0	6
Bushfire Prone Land	NSW Rural Fire Service	15/06/2015	02/06/2015	Quarterly	1	2	2
Remnant Vegetation of the Cumberland Plain	NSW Office of Environment and Heritage	07/10/2014	04/08/2011	Unknown	2	4	61
RAMSAR Wetlands	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	0	0	0
ATLAS of NSW Wildlife	NSW Office of Environment and Heritage	23/10/2015	23/10/2015	Daily	-	-	-

Aerial Imagery 2015

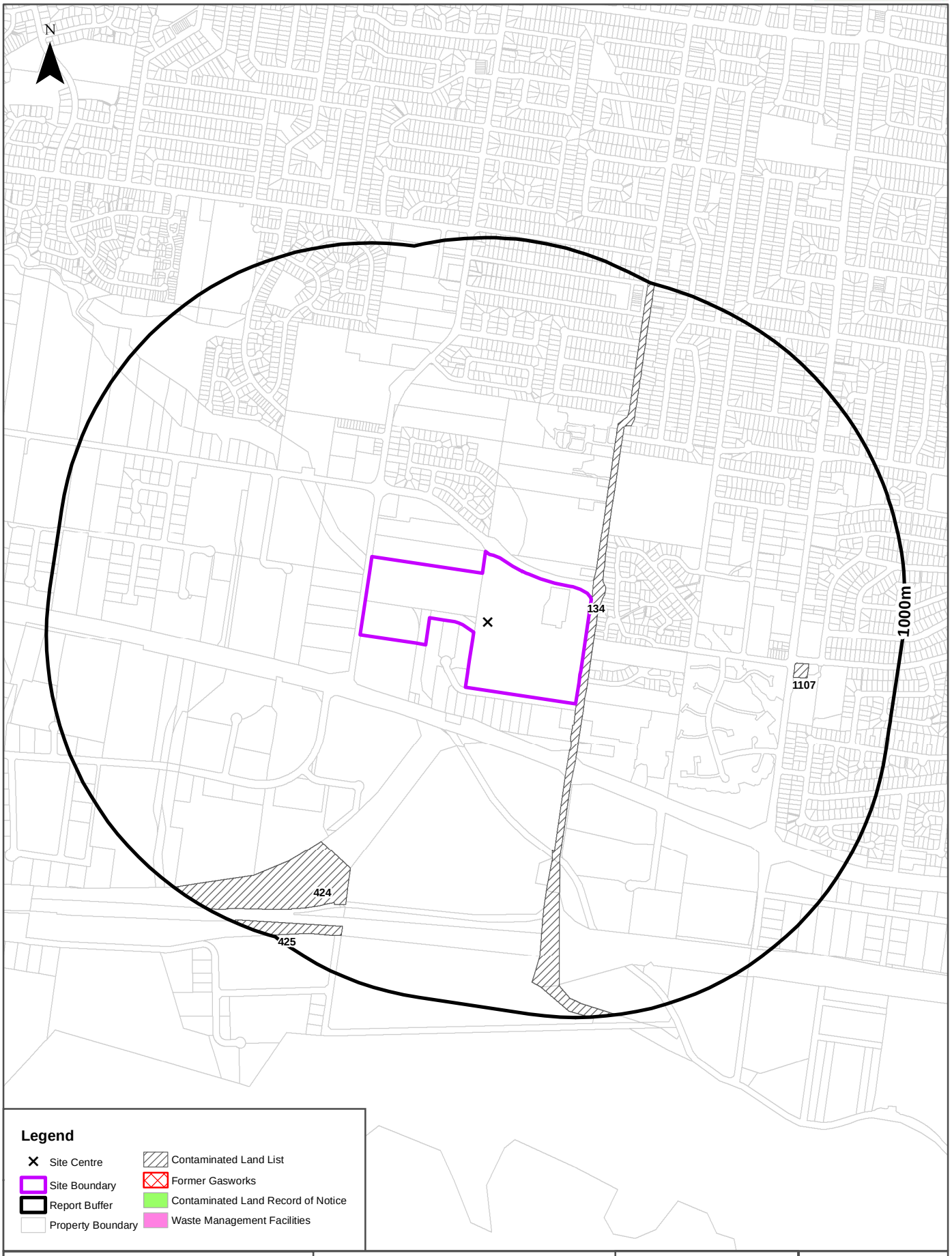
170 Reservoir Road, Arndell Park, NSW 2148

Scale:	Data Sources: Aerial Imagery © 2015 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27/10/2015

0 50 100 200
Meters

Contaminated Land & Waste Management Facilities

170 Reservoir Road, Arndell Park, NSW 2148



Contaminated Land

170 Reservoir Road, Arndell Park, NSW 2148

List of NSW contaminated sites notified to EPA

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

Map Id	Site	Address	Suburb	Activity	EPA site management class	Status	Dist	Direction	LC
134	Land at Reservoir Road	Reservoir Road	Blacktown	Unclassified	Regulation under CLM Act not required	Current EPA List	0m	Road Match	3
424	Caltex Service Station	M4 Eastbound Motorway	Eastern Creek	Service Station	Under assessment	Current EPA List	669m	South West	1
1107	Mobil Service Station	354 Flushcombe Road	Prospect	Service Station	Under assessment	Current EPA List	671m	East	1
425	Caltex Service Station M4 Motorway Westbound	M4 Westbound	Eastern Creek	Service Station	Regulation under CLM Act not required	Current EPA List	855m	South West	1

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

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

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

170 Reservoir Road, Arndell Park, NSW 2148

Contaminated Land: Record of Notices

Record of Notices within the report buffer:

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

Contaminated Land Records of Notice Data Source: Environment Protection Authority

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

Former Gasworks

Former Gasworks within the report buffer:

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

Former Gasworks Data Source: Environment Protection Authority

Waste Management Facilities & UPPS Sensitive Zones

170 Reservoir Road, Arndell Park, NSW 2148

National Waste Management Site Database

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

Site Id	Owner	Name	Address	Suburb	Postcode	Landfill	Reprocess	Transfer	Distance	Direction	LC
N/A	No records in buffer										

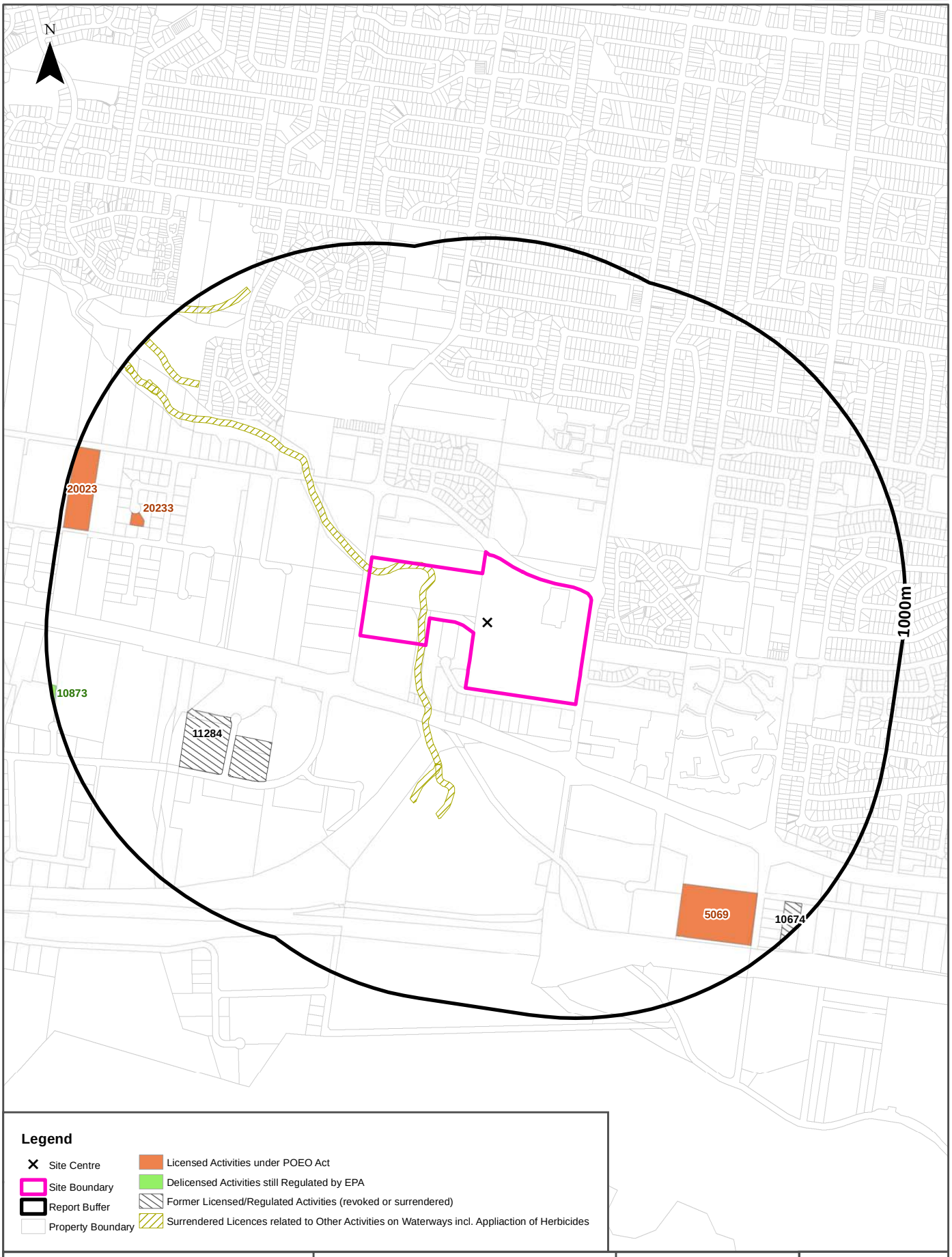
Underground Petroleum Storage System Sensitive Zones

Is the site within a UPSS Regulation Environmentally Sensitive Zone?

No, nearest UPSS sensitive zone is approx 1km south of the site

EPA Activities

170 Reservoir Road, Arndell Park, NSW 2148



EPA Activities

170 Reservoir Road, Arndell Park, NSW 2148

Licensed Activities under the POEO Act 1997

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

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
5069	RED LEA CHICKENS PTY LTD	RED LEA CHICKENS PTY LTD	421-427 FLUSHCOMBE ROAD	BLACKTOWN	Slaughtering or processing animals	1	665m	South East
20233	STATE WASTE SERVICES (NSW) PTY LIMITED	9 Kenoma Place, Arndell Park NSW 2148	9 Kenoma Place	ARNDELL PARK	Non-thermal treatment of hazardous and other waste	1	733m	West
20233	STATE WASTE SERVICES (NSW) PTY LIMITED	9 Kenoma Place, Arndell Park NSW 2148	9 Kenoma Place	ARNDELL PARK	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	1	733m	West
20023	ELGAS LTD	Elgas	22 Holbeche Road	ARNDELL PARK	Petroleum products storage	1	905m	West

POEO Licence Data Source: Environment Protection Authority

Delicensed Activities still regulated by the EPA

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

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
10873	SIGMA COACHAIR GROUP PTY LTD	SIGMA COACHAIR GROUP PTY LTD	3 Distillers Place	HUNTINGWOOD	Hazardous, Industrial or Group A Waste Generation or Storage	1	981m	West

Delicensed Activities Data Source: Environment Protection Authority

EPA Activities

170 Reservoir Road, Arndell Park, NSW 2148

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

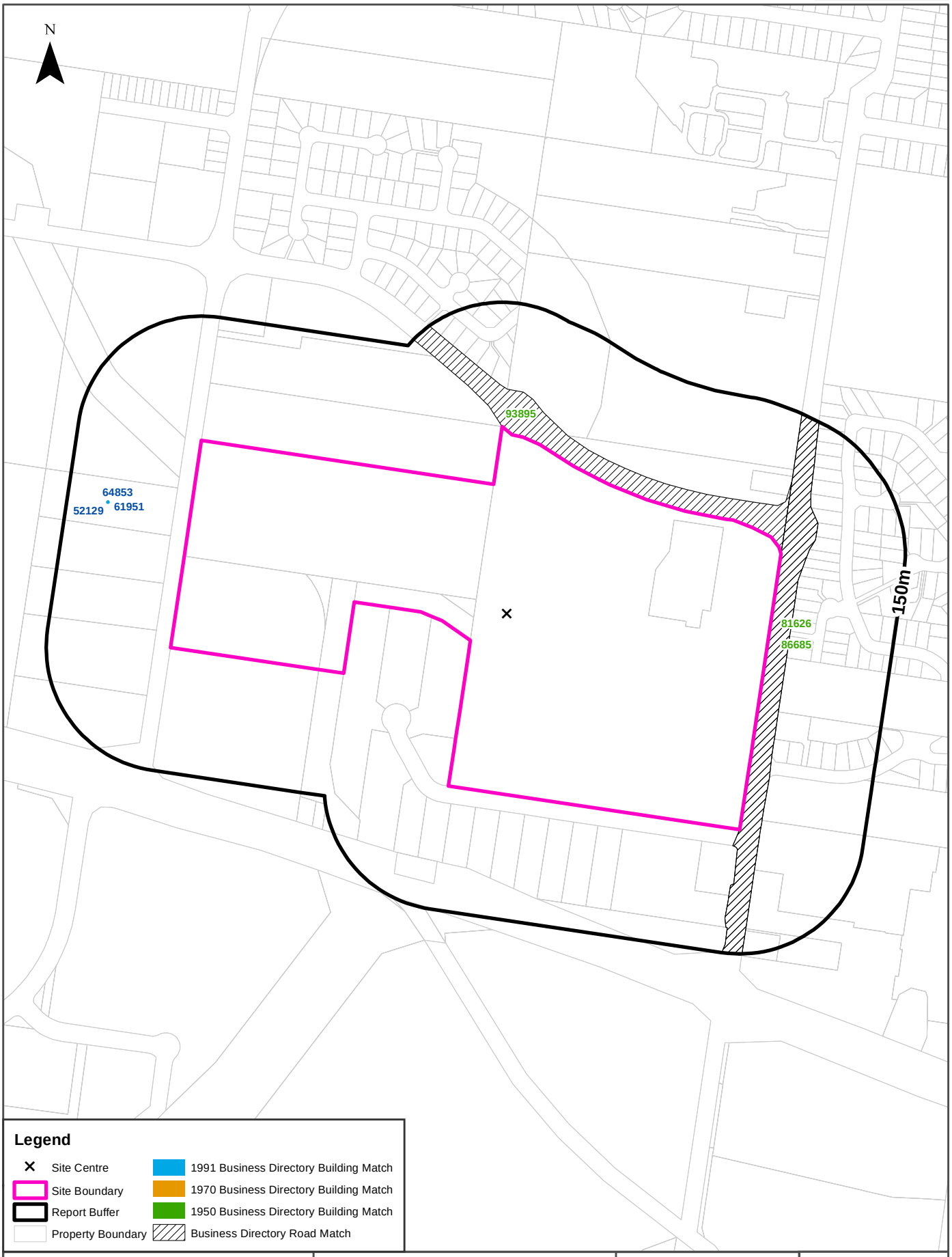
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the report buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	0m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	0m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	0m	-
11284	GLAXOSMITHKLINE AUSTRALIA PTY LTD	1 Decker Place, HUNTINGWOOD, NSW 2148	Surrendered	02/11/2000	Hazardous, Industrial or Group A Waste Generation or Storage	1	441m	South West
10674	RED LEA CHICKENS PTY LTD	14 Augusta Street, BLACKTOWN, NSW 2148	Surrendered	26/06/2000	General animal products production	1	916m	South East

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directory Records

170 Reservoir Road, Arndell Park, NSW 2148



Historical Business Directories

170 Reservoir Road, Arndell Park, NSW 2148

1991 Business Directory Records

Records from the 1991 UBD Business Directory within 150m of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Motor Body Builders	Maxi Cube Fruehauf	200 Walters Rd, Blacktown 2148	52129	Building Match	99m	West
Semi Trailer Mfrs &/or Dists	Fruehauf Trailers (A'asia) Pty Ltd	200 Walters Rd Blacktown 2148	61951	Building Match	99m	West
Trailer &/or Trailer Equipment Mfrs &/or Dists	Fruehuel Trailers Pty Ltd	200 Walters Rd Blacktown 2148	64853	Building Match	99m	West

1970 Business Directory Records

Records from the 1970 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
N/A	No records in buffer				

1970 Business Directory Drycleaners

Drycleaners from the 1970 UBD Business Directory within 2km of the site:

Activity	Organisation	Address	Suburb	Ref No.	Location Confidence	Distance	Direction
N/A							

Historical Business Directories

170 Reservoir Road, Arndell Park, NSW 2148

1950 Business Directory Records

Records from the 1950 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR ACCESSORIES-DEALER	Harper, G. W., Reservoir Rd., Blacktown	81626	Road Match	0m	East
MOTOR SPARE PARTS DEALERS-RETAIL	Harper, G. W., Reservoir Rd., Blacktown	86685	Road Match	0m	East
POULTRY FARMERS	Brown, C., Holbeche Rd., Blacktown	93895	Road Match	0m	North

1950 Business Directory Drycleaners

Drycleaners from the 1950 UBD Business Directory within 2km of the site:

Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
N/A						

Aerial Imagery 2014

170 Reservoir Road, Arndell Park, NSW 2148

Scale: 0 50 100 200 Meters	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 26/10/2015

Aerial Imagery 2009

170 Reservoir Road, Arndell Park, NSW 2148

Scale:
0 50 100 200
Meters

Data Sources: Aerial Imagery © 2015 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27/10/2015

Aerial Imagery 2004

170 Reservoir Road, Arndell Park, NSW 2148

Scale:	Data Sources: Aerial Imagery © 2015 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.	Coordinate System: GDA 1994 MGA Zone 56	Date: 27/10/2015

0 50 100 200
Meters

Aerial Imagery 1991

170 Reservoir Road, Arndell Park, NSW 2148

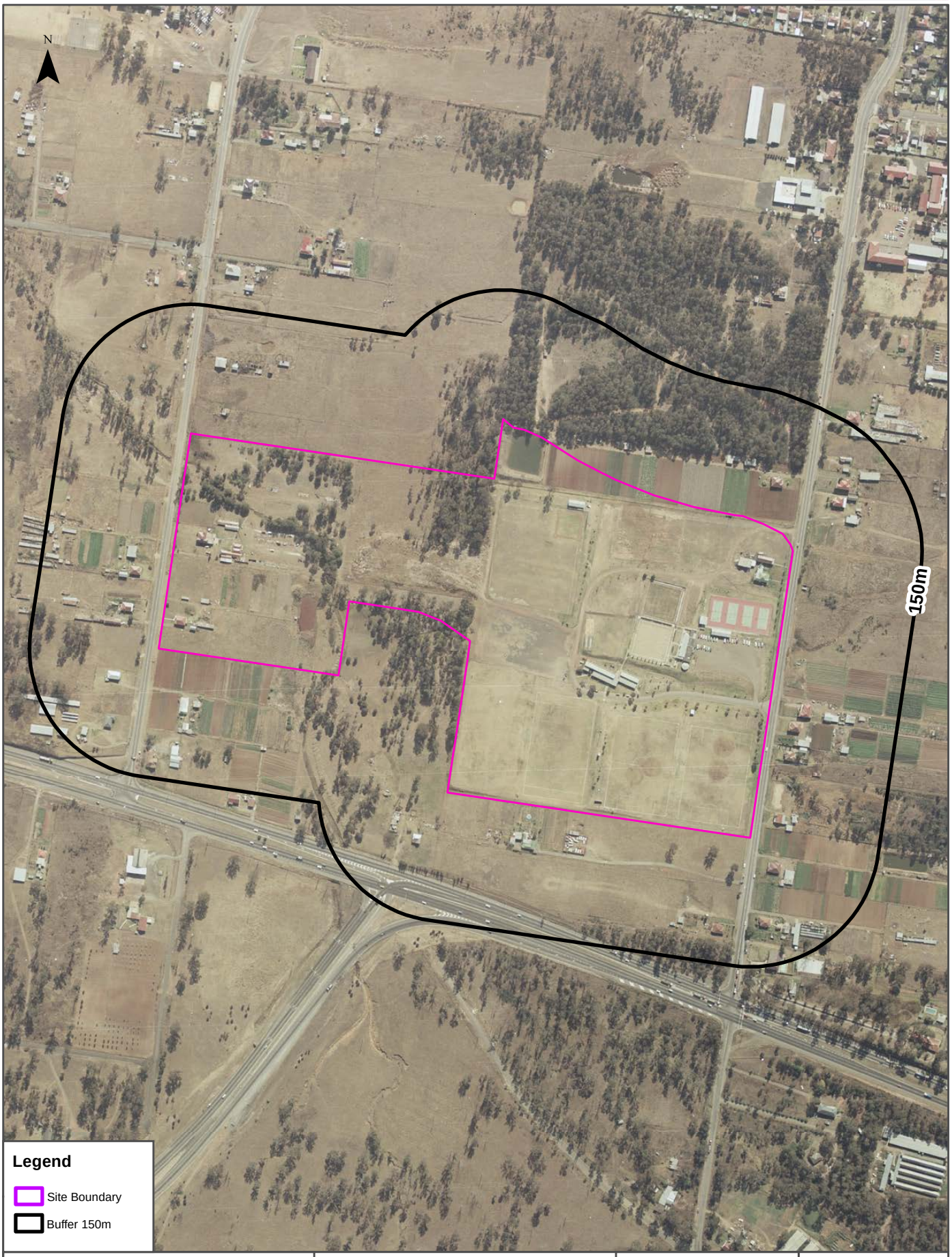
Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 30/10/2015

Aerial Imagery 1982

170 Reservoir Road, Arndell Park, NSW 2148



Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System: GDA 1994 MGA Zone 56

Date: 30/10/2015

Aerial Imagery 1970

170 Reservoir Road, Arndell Park, NSW 2148

Scale:
0 50 100 200
Meters

Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27/10/2015

Aerial Imagery 1961

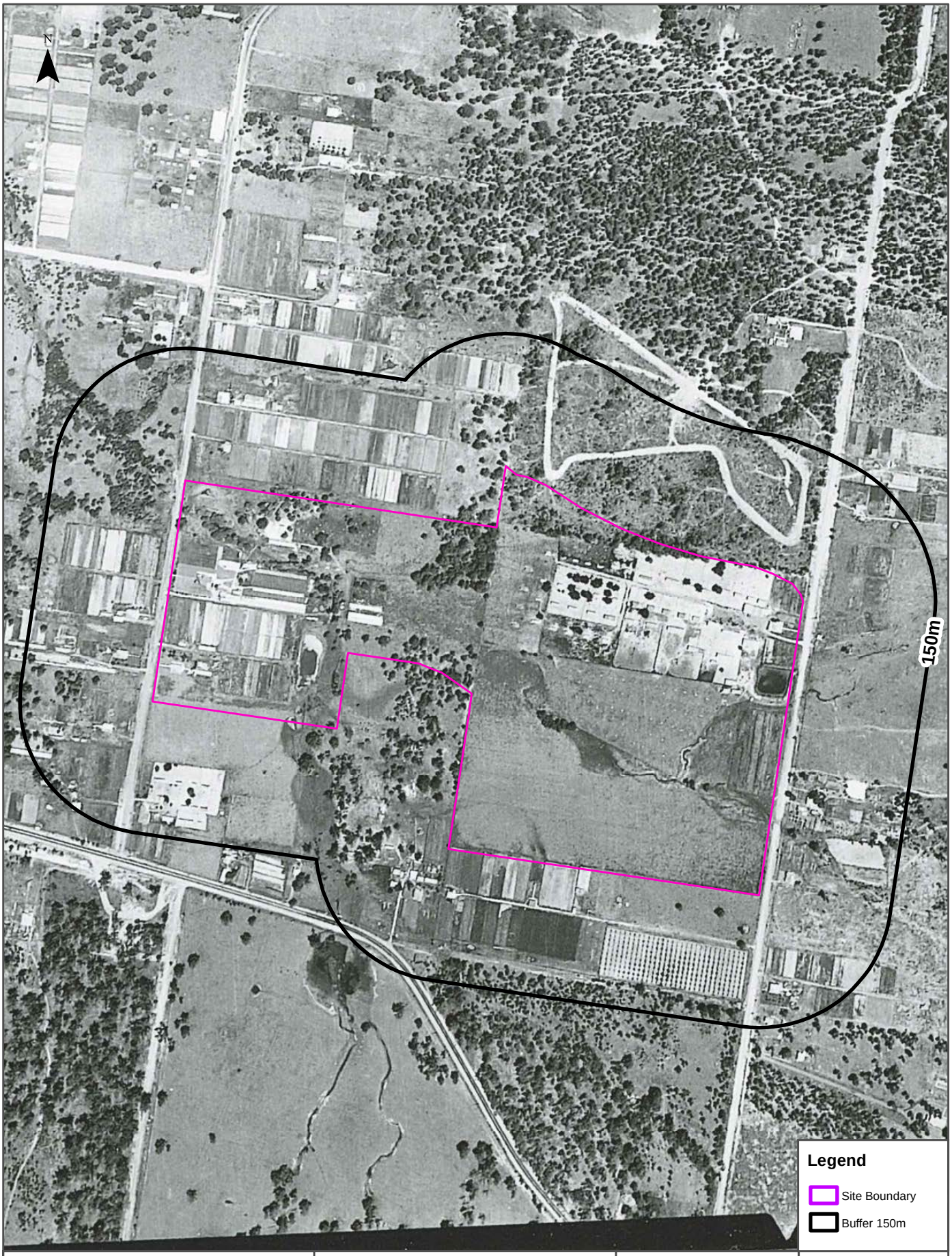
170 Reservoir Road, Arndell Park, NSW 2148

Scale:	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 27/10/2015

0 50 100 200
Meters

Aerial Imagery 1956

170 Reservoir Road, Arndell Park, NSW 2148



Scale: 0 50 100 200 Meters	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 27/10/2015

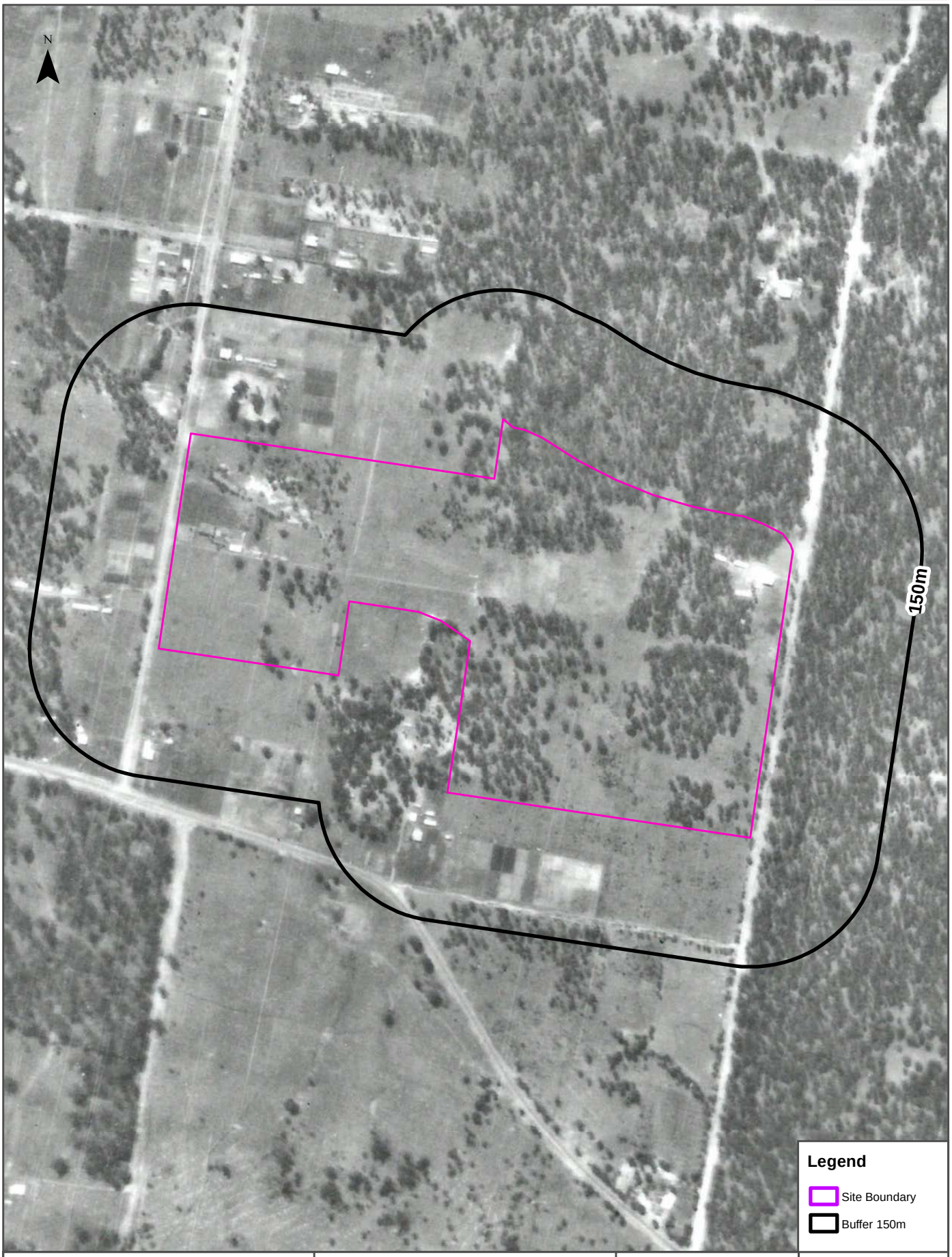
Aerial Imagery 1943

170 Reservoir Road, Arndell Park, NSW 2148

Scale: 0 50 100 200 Meters	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 26/10/2015

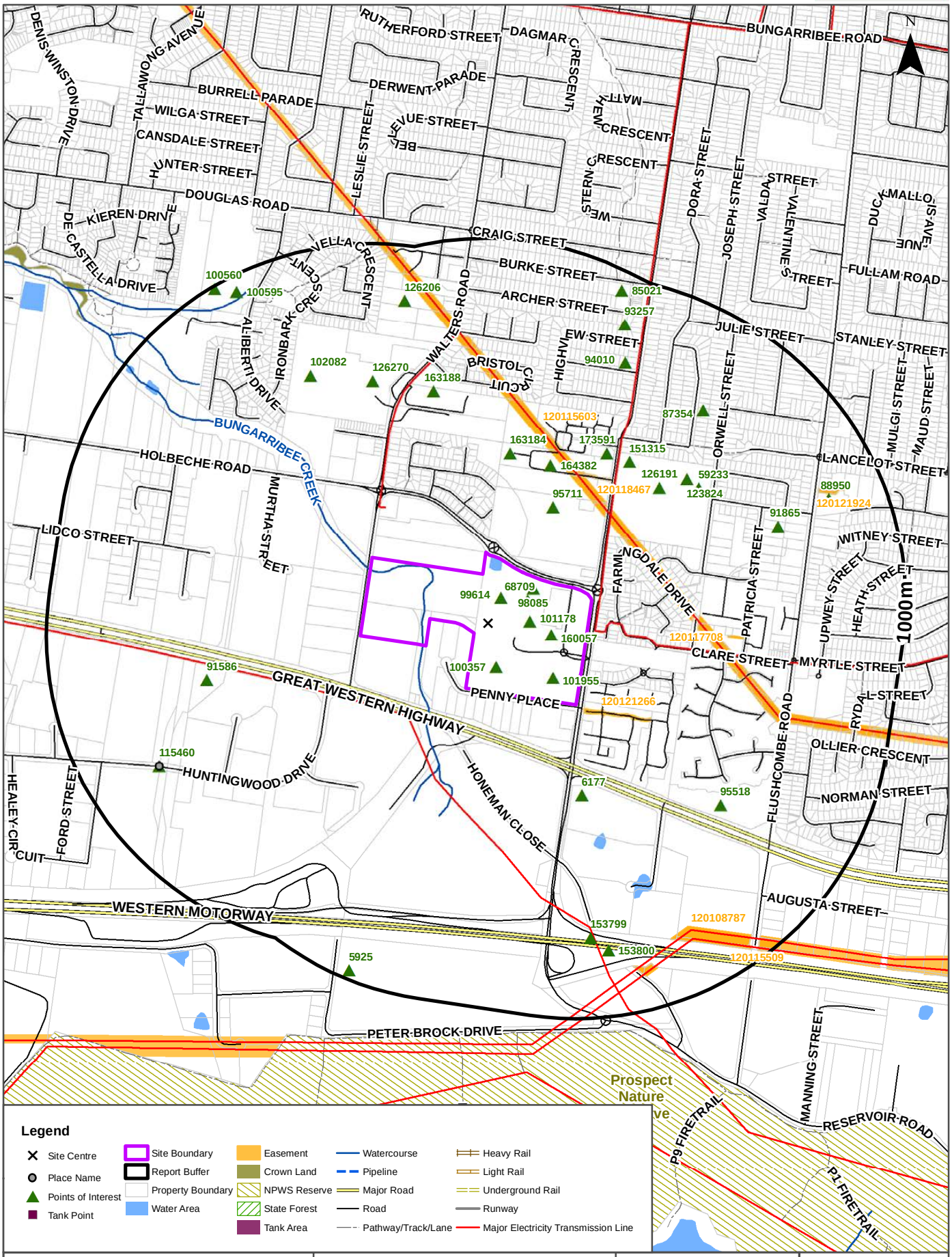
Aerial Imagery 1930

170 Reservoir Road, Arndell Park, NSW 2148



Topographic Features

170 Reservoir Road, Arndell Park, NSW 2148



Topographic Data

170 Reservoir Road, Arndell Park, NSW 2148

Points of Interest

What Points of Interest exist within the report buffer?

Map Id	Feature Type	Label	Distance	Direction
68709	Sports Centre	H LAYBUTT SPORTING COMPLEX	0m	Onsite
98085	Sports Court	TENNIS COURTS	0m	Onsite
99614	Sports Field	BASEBALL FIELD	0m	Onsite
100357	Sports Field	Sports Field	0m	Onsite
101178	Sports Field	BOWLING GREENS	0m	Onsite
101955	Sports Field	Sports Field	0m	Onsite
160057	Club	BLACKTOWN WORKERS SPORTING CLUB	0m	Onsite
95711	Park	HARPERS BUSH	228m	North East
6177	Community Facility	SALVATION ARMY YOUTH CENTRE	289m	South East
163184	Community Home	ST HEDWIG VILLAGE	323m	North
164382	Retirement Village	ST HEDWIG VILLAGE	337m	North
126191	Primary School	ST MICHAEL'S PRIMARY SCHOOL	408m	North East
151315	Special School	THE JOHN BERNE SCHOOL PETE'S PLACE	437m	North East
173591	Child Care Centre	TINAS KINDERGARTEN	440m	North East
123824	High School	NAGLE COLLEGE	483m	North East
59233	Place Of Worship	CATHOLIC CHURCH	487m	North East
91586	Park	DOG KENNEL RESERVE	509m	West
163188	Community Home	ST DOMINICS HOSTEL	539m	North
126270	High School	EVANS HIGH SCHOOL	561m	North West
95518	Park	ROBERT BROWN RESERVE	561m	South East
102082	Sports Field	SOCCER FIELD	611m	North West
91865	Park	GLEESONS TREES RESERVE	637m	East
87354	Park	Park	691m	North East
94010	Park	Park	735m	North East
153799	Roadside Emergency Telephone	362	744m	South
115460	Suburb	HUNTINGWOOD	765m	South West
153800	Roadside Emergency Telephone	361	788m	South
88950	Park	PAT ZIKAN RESERVE	819m	East
126206	Primary School	WALTERS ROAD PUBLIC SCHOOL	824m	North
93257	Park	Park	844m	North East
85021	Park	Park	938m	North
100595	Sports Field	Sports Field	949m	North West
5925	Community Facility	DRIVER SAFETY CENTRE	973m	South

Map Id	Feature Type	Label	Distance	Direction
100560	Sports Field	Sports Field	991m	North West

Topographic Data

170 Reservoir Road, Arndell Park, NSW 2148

Tanks (Areas)

What are the Tank Areas located within the report buffer?

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

Tanks (Points)

What are the Tank Points located within the report buffer?

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

Easements

What Easements exist within the report buffer?

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120121266	Primary	Undefined		26m	South East
120115603	Primary	Undefined		199m	North
120118467	Primary	Undefined		353m	North East
120117708	Primary	Undefined		444m	East
120108787	Primary	Undefined		789m	South East
120121924	Primary	Undefined		797m	East
120115509	Primary	Undefined		805m	South East

Topographic Data

170 Reservoir Road, Arndell Park, NSW 2148

State Forest

What State Forest exist within the report buffer?

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

National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the report buffer?

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

Elevation Contours (m AHD)

170 Reservoir Road, Arndell Park, NSW 2148

Legend

- Site Centre
- Elevation Contour (m AHD)
- Site Boundary
- Report Buffer
- Property Boundary

Accuracy & Currency: This contour data can be up to 0.4 of the contour interval out in height and must therefore not be used for any design or engineering works, but only as a general guide to topography. Gaps may occur along contour lines due to vertical topography, obscured topography in the source photography such as buildings, dense vegetation or dead ground, or the fact that original buildings have been replaced in the intervening thirty years since the original contour capture.

Scale: 0 100 200 400 Meters

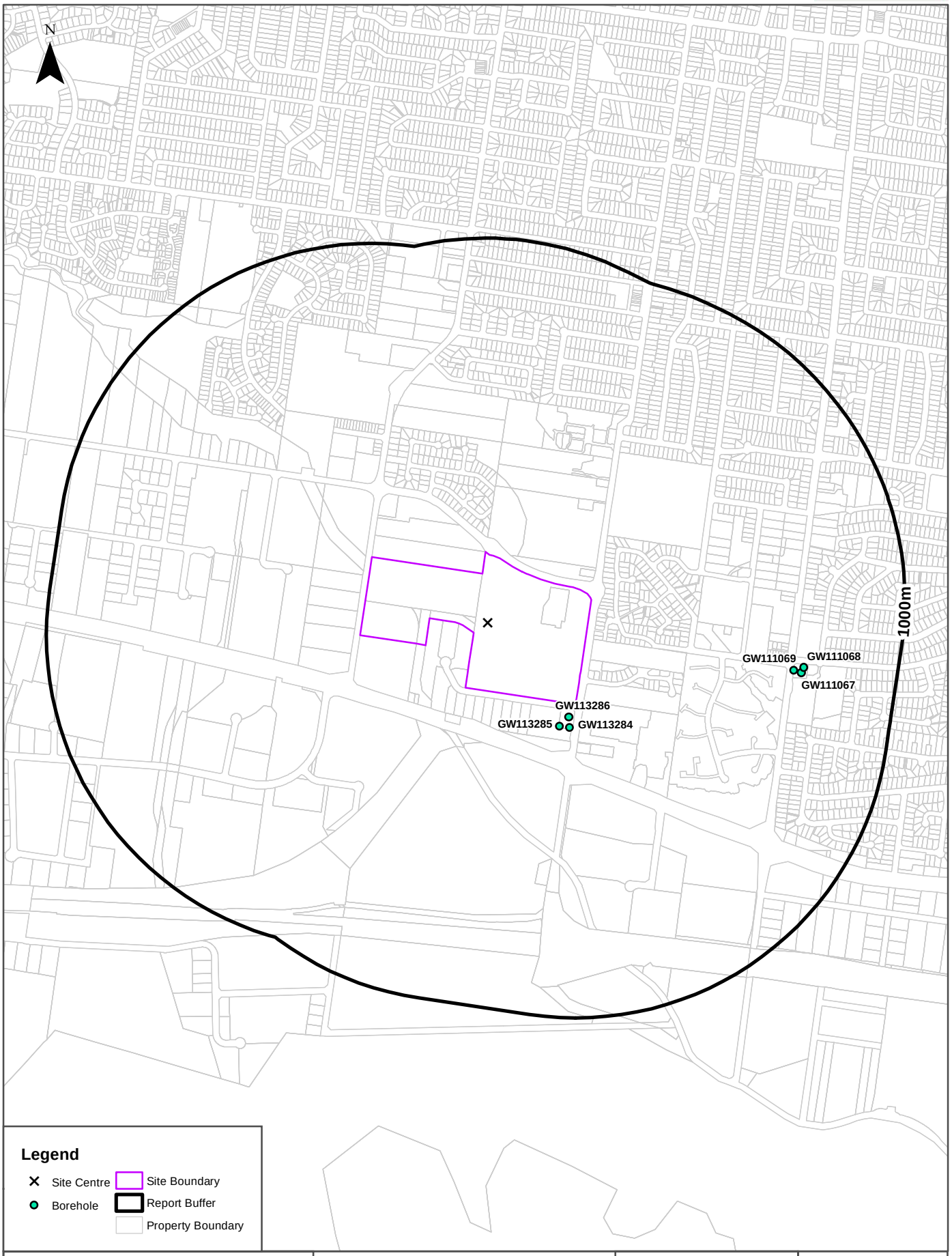
Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2015

Coordinate System: GDA 1994 MGA Zone 56

Date: 27/10/2015

Groundwater Boreholes

170 Reservoir Road, Arndell Park, NSW 2148



Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2015

Coordinate System: GDA 1994 MGA Zone 56

Date: 27/10/2015

Hydrogeology & Groundwater

170 Reservoir Road, Arndell Park, NSW 2148

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the report buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)
Creative Commons 3.0 © Commonwealth of Australia http://creativecommons.org/licenses/by/3.0/au/deed.en

Groundwater Boreholes

Boreholes within the report buffer:

GW No.	Licence No	Work Type	Owner Type	Purpose	Contractor	Complete Date	Final Depth	Drilled Depth	Salinity	SWL	Yield	Elev	Dist	Dir
GW113286	10BL604309 (Active)	Bore	Private	Monitoring		01/01/2010	10.50	10.50					45m	South East
GW113284	10BL604309 (Active)	Bore	Private	Monitoring		01/01/2010	12.00	12.00					77m	South East
GW113285	10BL604309 (Active)	Bore	Private	Monitoring		01/01/2010	10.50	10.50					78m	South East
GW111069	10BL604054			Monitoring	Numac Drilling Services Pty Ltd	27/04/2010	7.50	7.50					673m	East
GW111067	10BL604054			Monitoring	Numac Drilling Services Pty Ltd	27/04/2010	7.50	7.50					697m	East
GW111068	10BL604054			Monitoring	Numac Drilling Services Pty Ltd	27/04/2010	7.50	7.50					703m	East

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

Hydrogeology & Groundwater

170 Reservoir Road, Arndell Park, NSW 2148

Driller's Logs

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

Groundwater No	Drillers Log	Distance	Direction
GW111069	0.00m-0.80m FILL 0.80m-1.50m CLAY FIRM DRY BROWN 1.50m-5.50m CLAY HIGH PLASTICITY FIRM BROWN 5.50m-7.00m CLAY BROWN.DAMP,MOIST 7.00m-7.50m CLAY BROWN, SATURATED	673m	East
GW111067	0.00m-0.80m FILL 0.80m-1.50m CLAY FIRM DRY BROWN 1.50m-5.50m CLAY FIRM,BROWN,HIGH PLASTICITY 5.50m-7.00m CLAY BROWN, DAMP,MOIST 7.00m-7.50m CLAY BROWN SATURATED	697m	East
GW111068	0.00m-0.80m FILL 0.80m-1.50m CLAY FIRM DRY BROWN 1.50m-5.50m CLAY HIGH PLASTICITY FIRM BROWN 5.50m-7.00m CLAY BROWN DAMP MOIST 7.00m-7.50m CLAY BROWN SATURATED	703m	East

Geology 1:100,000

170 Reservoir Road, Arndell Park, NSW 2148

Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2015

Coordinate System: GDA 1994 MGA Zone 56

Date: 27/10/2015

Geology

170 Reservoir Road, Arndell Park, NSW 2148

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rwb	Shale, carbonaceous claystone,claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff	Bringelly Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000

What are the Geological Units within the report buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rwb	Shale, carbonaceous claystone,claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff	Bringelly Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

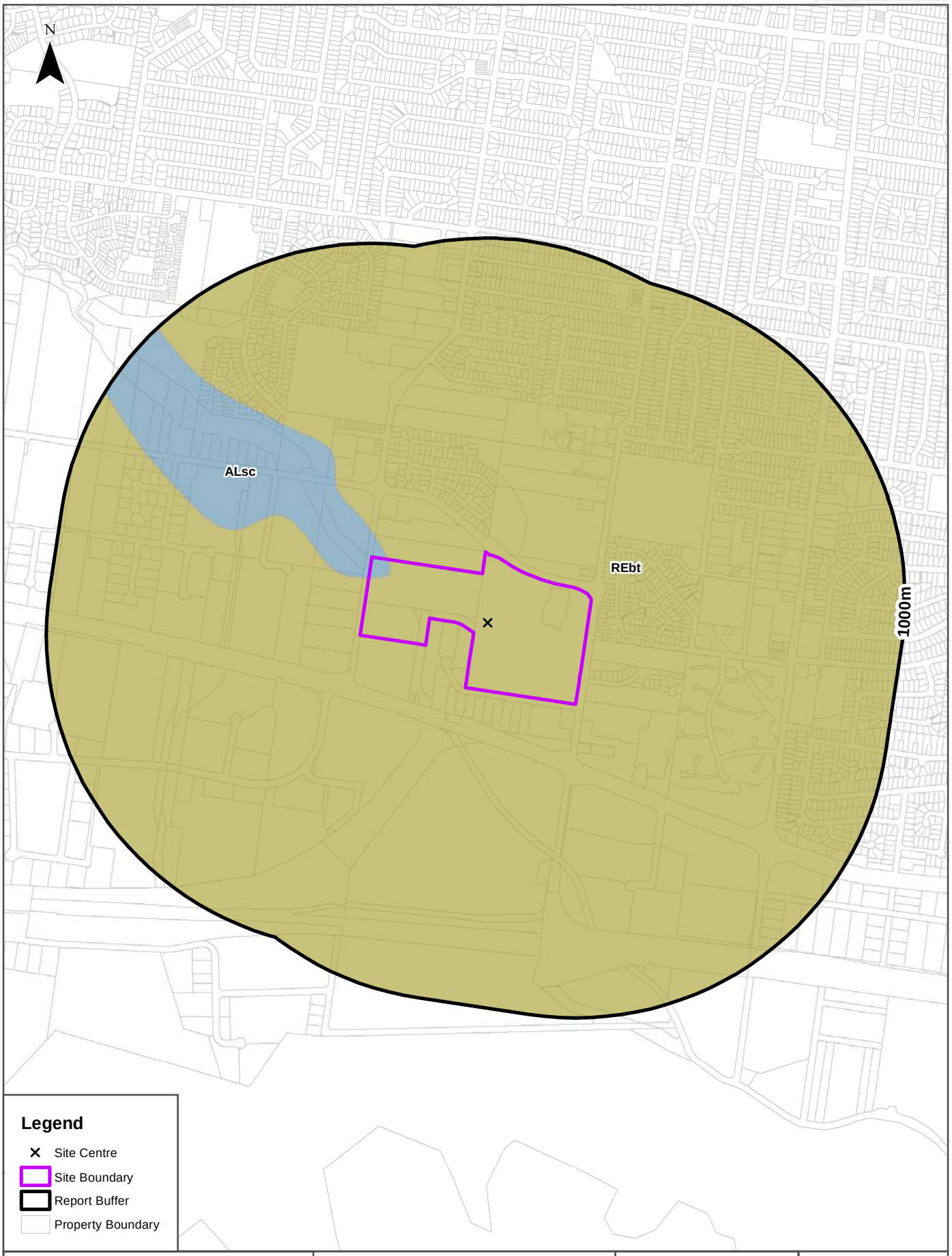
What are the Geological Structures within the report buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

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

Soil Landscapes

170 Reservoir Road, Arndell Park, NSW 2148



Soils

170 Reservoir Road, Arndell Park, NSW 2148

Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
ALsc	SOUTH CREEK		ALLUVIAL	Penrith	1:100,000
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000

What are the Soil Landscapes within the report buffer?

Soil Code	Name	Group	Process	Map Sheet	Scale
ALsc	SOUTH CREEK		ALLUVIAL	Penrith	1:100,000
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000

Acid Sulfate Soils

170 Reservoir Road, Arndell Park, NSW 2148

Acid Sulfate Soils

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

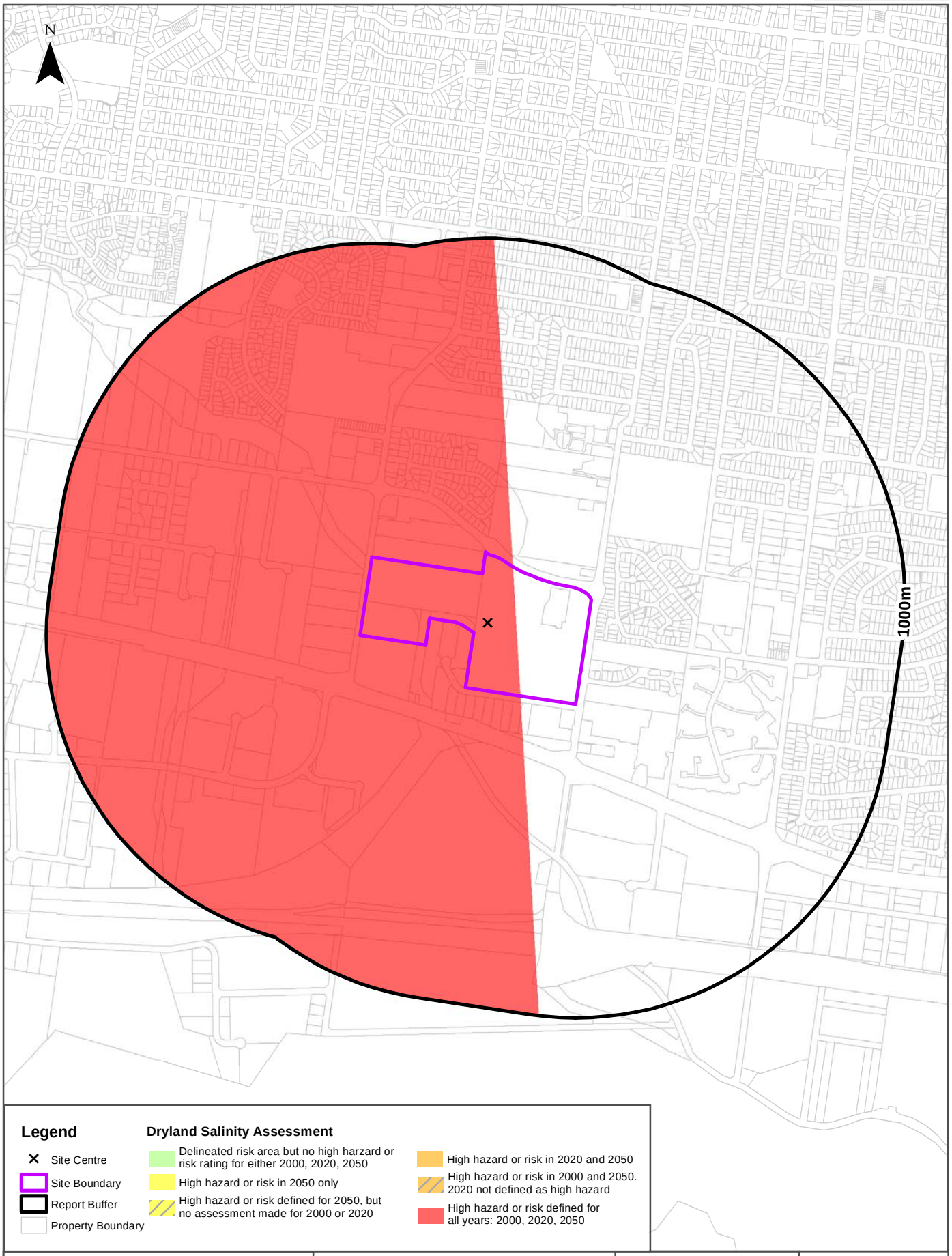
Soil Class	Description
N/A	

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

Soil Class	Description	Distance	Direction
N/A			

Dryland Salinity

170 Reservoir Road, Arndell Park, NSW 2148



Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2015

Coordinate System: GDA 1994 MGA Zone 56

Date: 27/10/2015

Dryland Salinity

170 Reservoir Road, Arndell Park, NSW 2148

Dryland Salinity

Is there Dryland Salinity data onsite?

Yes

Is there Dryland Salinity data within the report buffer?

Yes

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
High hazard or risk	High hazard or risk	High hazard or risk	0m	Onsite

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

Mining Subsidence Districts

170 Reservoir Road, Arndell Park, NSW 2148

Mining Subsidence Districts

Mining Subsidence Districts within the report buffer?

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

Environmental Zoning

170 Reservoir Road, Arndell Park, NSW 2148

State Environmental Planning Policy Protected Areas

Are there any State Environmental Planning Policy Protected Areas onsite or within the report buffer?

Dataset	Onsite	Within Site Buffer	Distance
SEPP14 - Coastal Wetlands	No	No	N/A
SEPP26 - Littoral Rainforests	No	No	N/A
SEPP71 - Coastal Protection Zone	No	No	N/A

SEPP Protected Areas Data Source: NSW Department of Planning & Environment

State Environmental Planning Policy Major Developments (2005)

State Environmental Planning Policy Major Developments within the report buffer?

Map Id	Feature	Effective Date	Distance	Direction
N/A	No records within buffer			

SEPP Major Development Data Source: NSW Department of Planning & Environment

State Environmental Planning Policy Strategic Land Use Areas

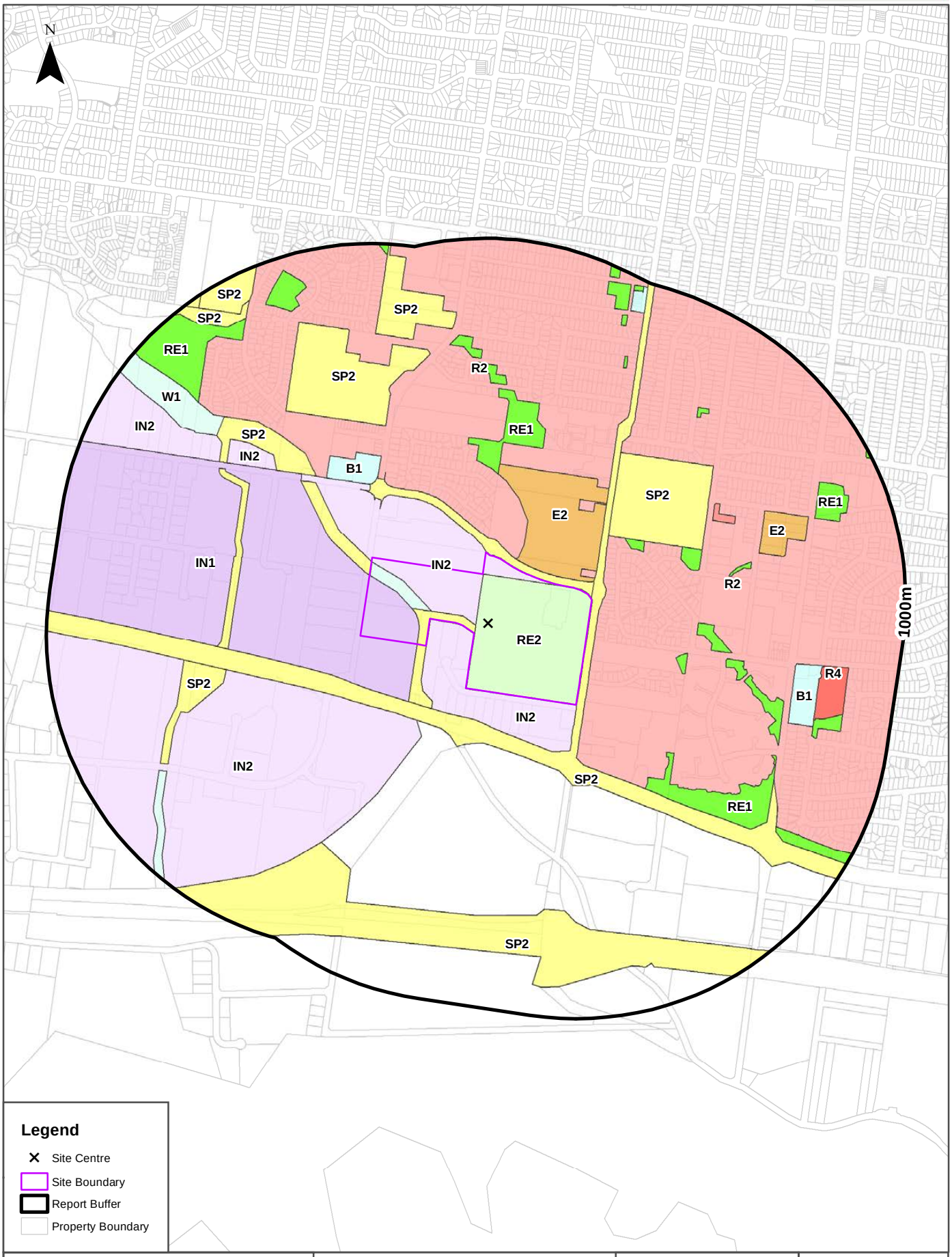
State Environmental Planning Policy Strategic Land Use Areas onsite or within the report buffer?

Strategic Land Use	SEPPNo	Effective Date	Amendment	Amendment Year	Distance	Direction
No records within buffer						

SEPP Strategic Land Use Data Source: NSW Department of Planning & Environment

LEP Planning Zones

170 Reservoir Road, Arndell Park, NSW 2148



Local Environmental Plan

170 Reservoir Road, Arndell Park, NSW 2148

Land Zoning

What Local Environmental Plan Land Zones exist within the report buffer?

Zone	Description	Purpose	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Distance	Direction
RE2	Private Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	Onsite
IN2	Light Industrial		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	Onsite
IN1	General Industrial		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	Onsite
W1	Natural Waterways		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	Onsite
SP2	Infrastructure	Drainage	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	Onsite
SP2	Infrastructure	Local Road	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	North
SP2	Infrastructure	Classified Road	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		0m	South East
E2	Environmental Conservation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		24m	North East
R2	Low Density Residential		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		25m	East
R2	Low Density Residential		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		26m	North
R2	Low Density Residential		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		42m	North East
IN2	Light Industrial		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		187m	West
SP2	Infrastructure	Educational Establishment? of Public Worship	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		194m	North East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		198m	North East
B1	Neighbourhood Centre		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		234m	North West
R2	Low Density Residential		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		248m	North East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		252m	North
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		291m	East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		310m	East
SP2	Infrastructure	Drainage	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		315m	North West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		322m	South East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		345m	East
SP2	Infrastructure	Drainage	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		411m	West
IN2	Light Industrial		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		412m	North West
SP2	Infrastructure	Educational Establishment	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		423m	North West
SP2	Infrastructure	Drainage	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		441m	West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		442m	East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		450m	East
R3	Medium Density Residential		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		458m	North East

Zone	Description	Purpose	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		515m	East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		537m	North
E2	Environmental Conservation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		553m	East
IN2	Light Industrial		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		575m	North West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		618m	North
W1	Natural Waterways		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		629m	North West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		662m	North East
B1	Neighbourhood Centre		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		671m	East
SP2	Infrastructure	Educational Establishment	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		705m	North
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		716m	South East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		719m	North East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		743m	North West
R4	High Density Residential		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		751m	East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		753m	East
W1	Natural Waterways		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		753m	South West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		755m	East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		826m	North West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		836m	North East
SP2	Infrastructure	Drainage	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		864m	North West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		878m	North
SP2	Infrastructure	Educational Establishment	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		883m	North West
B1	Neighbourhood Centre		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		893m	North East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		956m	North East
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		962m	North
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		963m	North
SP2	Infrastructure	Educational Establishment? of Public Worship	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		969m	North West
RE1	Public Recreation		Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/08/2015		982m	North East

Local Environmental Plan

170 Reservoir Road, Arndell Park, NSW 2148

Minimum Subdivision Lot Size

What are the onsite Local Environmental Plan Minimum Subdivision Lot Sizes?

Symbol	Minimum Lot Size	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Info	Percentage of Site Area
V	2500 m2	Blacktown Local Environmental Plan 2015	26/05/2015	07/07/2015	07/07/2015			32.06

Maximum Height of Buildings

What are the onsite Local Environmental Plan Maximum Height of Buildings?

Symbol	Maximum Height of Building	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Info	Percentage of Site Area
No Data								

Floor Space Ratio

What are the onsite Local Environmental Plan Floor Space Ratios?

Symbol	Floor Space Ratio	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Info	Percentage of Site Area
No Data								

Land Applications

What are the onsite Local Environmental Plan Land Applications?

Application Type	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Percentage of Site Area
Included	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015		100

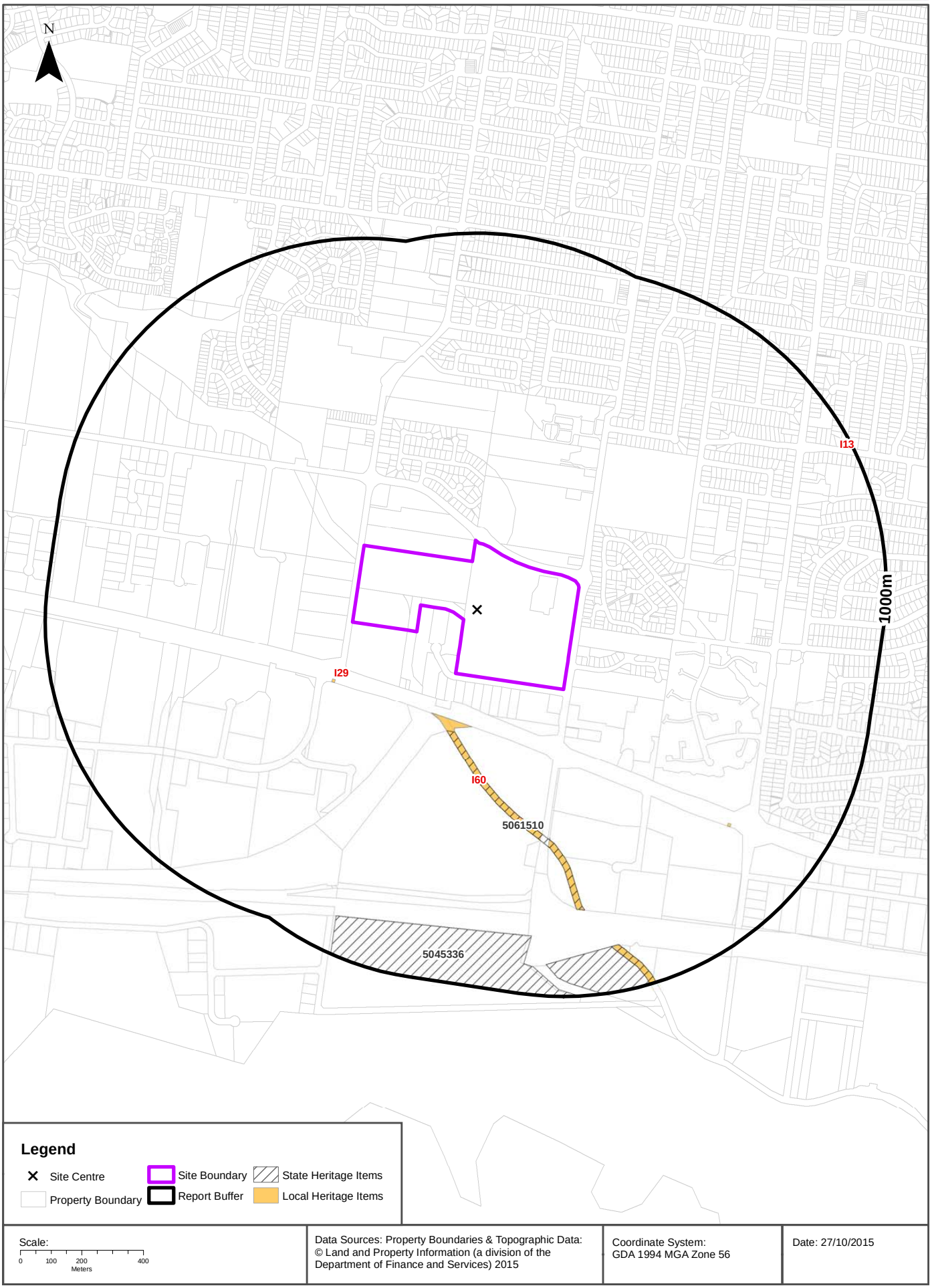
Land Reservation Acquisitions

What are the onsite Local Environmental Plan Land Reservation Acquisitions?

Reservation	LEP	Gazetted Date	Effective Date	Currency Date	Amendment	Comments	Percentage of Site Area
No Data							

Heritage Items

170 Reservoir Road, Arndell Park, NSW 2148



Heritage

170 Reservoir Road, Arndell Park, NSW 2148

State Heritage Items

What are the State Heritage Items located within the report buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5061510	Former Great Western Road,Prospect		Blacktown		1911	2535	188m	South
5045336	Prospect Reservoir and surrounding area		Blacktown		01370	2144	810m	South

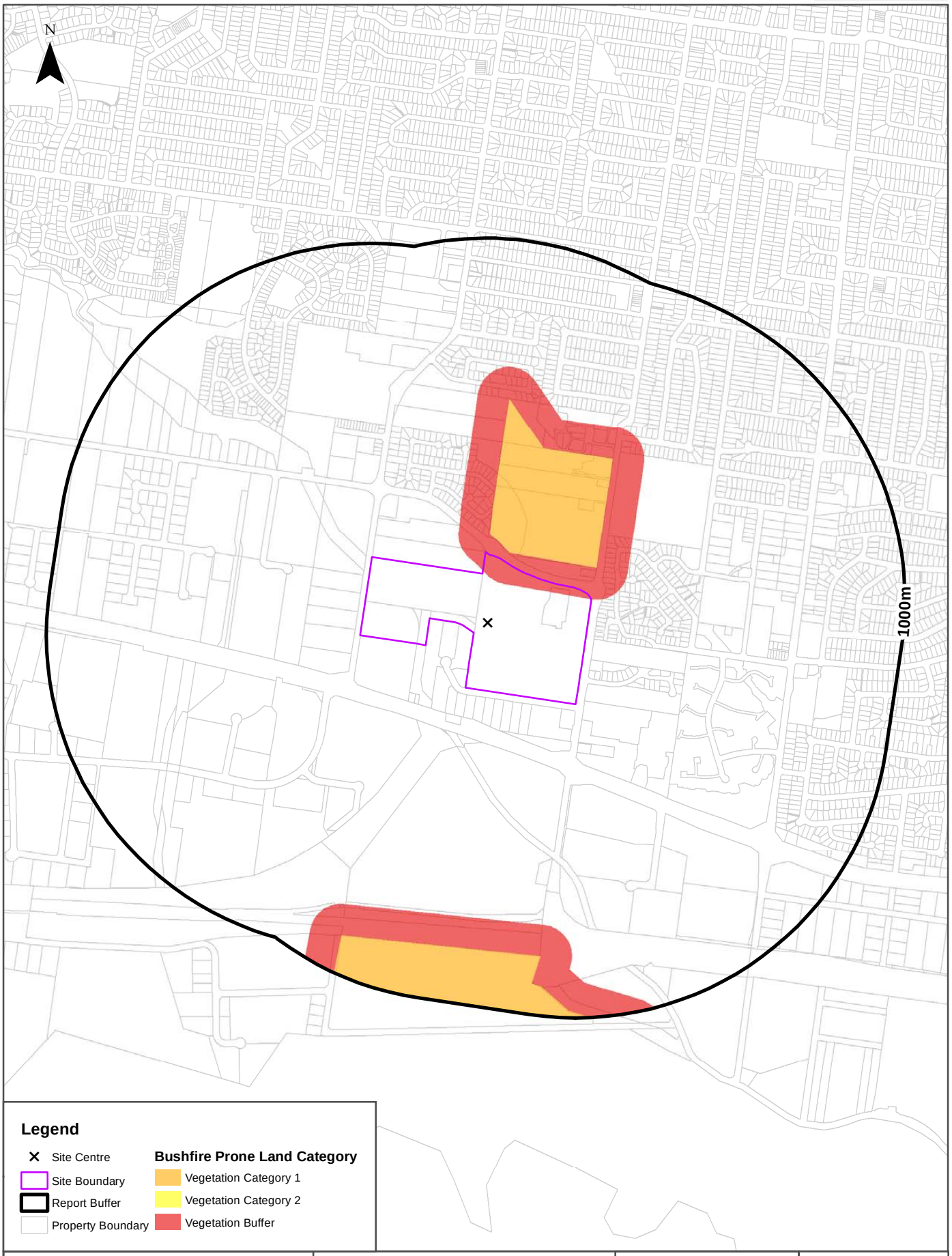
Local Heritage Items

What are the Local Heritage Items located within the report buffer?

Map Id	Name	Type	Significance	LEP	Gazetted Date	Effective Date	Currency Date	Distance	Direction
I60	Great Western Highway (former alignment)	Item - General	Local	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015	147m	South
I29	Seven Milestones	Item - General	Local	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015	195m	South West
I60	Great Western Highway (former alignment)	Item - General	Local	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015	484m	South
I29	Seven Milestones	Item - General	Local	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015	689m	South East
I60	Great Western Highway (former alignment)	Item - General	Local	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015	850m	South East
I13	Gates Gates	Item - General	Local	Blacktown Local Environmental Plan 2015	07/07/2015	07/07/2015	07/07/2015	982m	North East

Natural Hazards - Bushfire Prone Land

170 Reservoir Road, Arndell Park, NSW 2148



Data Sources: Property Boundaries:
© Land and Property Information (a division of the Department of Finance and Services) 2015

Coordinate System:
GDA 1994 MGA Zone 56

Date: 27/10/2015

Natural Hazards

170 Reservoir Road, Arndell Park, NSW 2148

Bushfire Prone Land

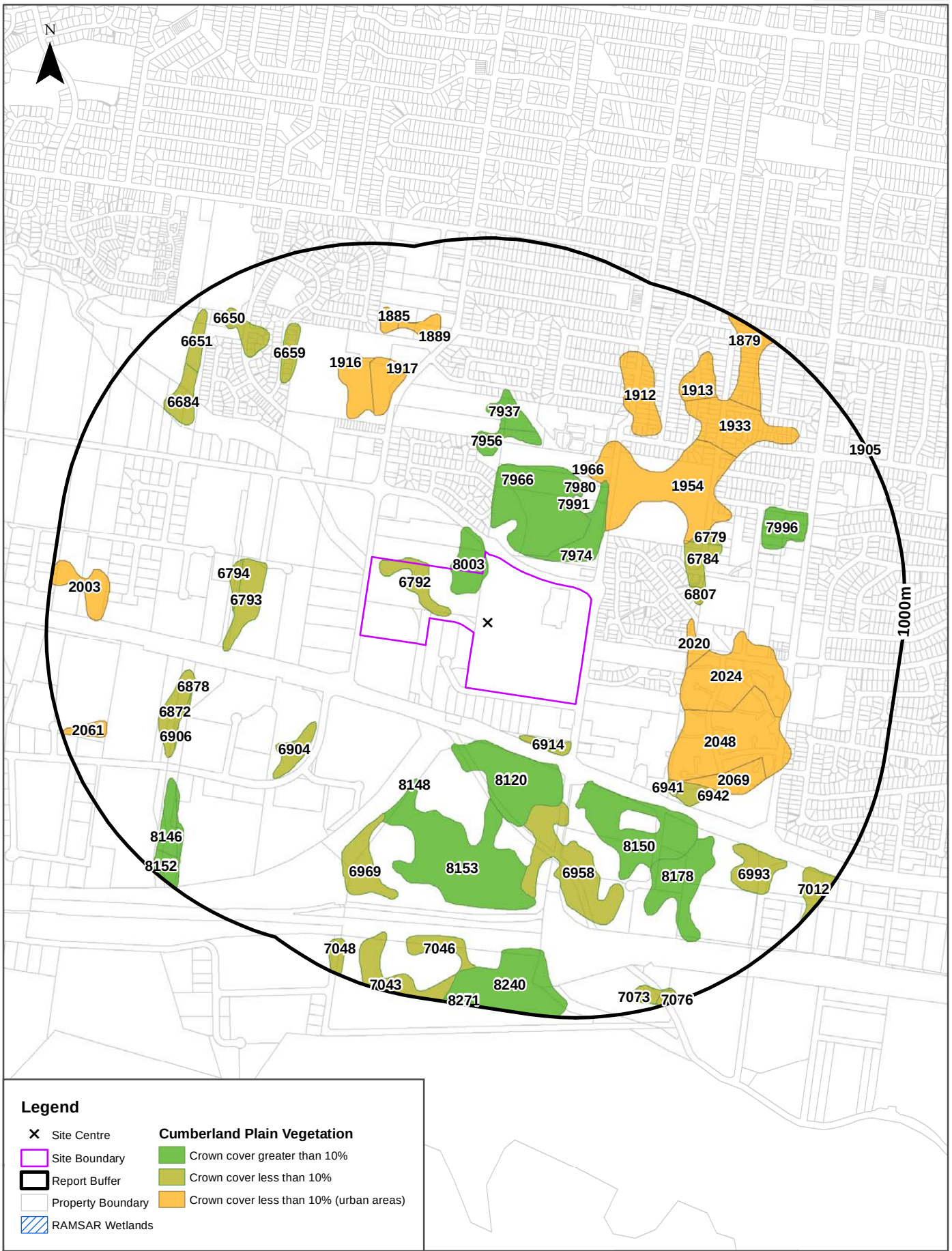
What are the nearest Bushfire Prone Land Categories that exist within the report buffer?

Bushfire Prone Land Category	Date Certified	Distance	Direction
Vegetation Buffer	18/07/2008	0m	Onsite
Vegetation Category 1	18/07/2008	29m	North East

Bushfire Prone Land Data Reference - NSW RFS GIS Data Set

Remnant Vegetation of the Cumberland Plain

170 Reservoir Road, Arndell Park, NSW 2148



Legend

- ✕ Site Centre
- Site Boundary
- Report Buffer
- Property Boundary
- RAMSAR Wetlands

Cumberland Plain Vegetation

- Crown cover greater than 10%
- Crown cover less than 10%
- Crown cover less than 10% (urban areas)

Scale: 0 100 200 400 Meters

Data Sources: Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2015

Coordinate System: GDA 1994 MGA Zone 56

Date: 27/10/2015

Ecological Constraints

170 Reservoir Road, Arndell Park, NSW 2148

Remnant Vegetation of the Cumberland Plain

What remnant vegetation of the Cumberland Plain exists within the report buffer?

Map Id	Crown Cover	Description	Distance	Direction
6792	Crown cover less than 10%	11 - Alluvial Woodland	0m	North West
8003	Crown cover greater than 10%	10 - Shale Plains Woodland	0m	North
7966	Crown cover greater than 10%	9 - Shale Hills Woodland	45m	North East
7974	Crown cover greater than 10%	10 - Shale Plains Woodland	47m	North East
6914	Crown cover less than 10%	10 - Shale Plains Woodland	119m	South East
8120	Crown cover greater than 10%	10 - Shale Plains Woodland	155m	South
1954	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	203m	North East
8150	Crown cover greater than 10%	10 - Shale Plains Woodland	248m	South East
7991	Crown cover greater than 10%	10 - Shale Plains Woodland	250m	North East
7980	Crown cover greater than 10%	10 - Shale Plains Woodland	286m	North East
7956	Crown cover greater than 10%	9 - Shale Hills Woodland	303m	North
6904	Crown cover less than 10%	10 - Shale Plains Woodland	309m	South West
2020	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	310m	East
6784	Crown cover less than 10%	9 - Shale Hills Woodland	312m	East
6807	Crown cover less than 10%	10 - Shale Plains Woodland	313m	East
6958	Crown cover less than 10%	10 - Shale Plains Woodland	314m	South
2024	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	319m	East
6793	Crown cover less than 10%	10 - Shale Plains Woodland	323m	West
8148	Crown cover greater than 10%	11 - Alluvial Woodland	329m	South West
8153	Crown cover greater than 10%	10 - Shale Plains Woodland	336m	South
2048	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	338m	South East
1992	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	340m	East
6779	Crown cover less than 10%	10 - Shale Plains Woodland	358m	East
1966	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	359m	North East
6941	Crown cover less than 10%	10 - Shale Plains Woodland	378m	South East
7937	Crown cover greater than 10%	10 - Shale Plains Woodland	392m	North
6794	Crown cover less than 10%	11 - Alluvial Woodland	400m	West
2069	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	415m	South East
6942	Crown cover less than 10%	9 - Shale Hills Woodland	416m	South East
1916	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	444m	North West

Map Id	Crown Cover	Description	Distance	Direction
1917	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	451m	North West
6969	Crown cover less than 10%	10 - Shale Plains Woodland	472m	South West
1912	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	522m	North East
6872	Crown cover less than 10%	11 - Alluvial Woodland	543m	West
6878	Crown cover less than 10%	10 - Shale Plains Woodland	549m	West
8178	Crown cover greater than 10%	10 - Shale Plains Woodland	560m	South East
7996	Crown cover greater than 10%	10 - Shale Plains Woodland	567m	East
1933	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	598m	North East
6659	Crown cover less than 10%	10 - Shale Plains Woodland	618m	North West
6906	Crown cover less than 10%	10 - Shale Plains Woodland	646m	West
6993	Crown cover less than 10%	10 - Shale Plains Woodland	672m	South East
1913	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	683m	North East
1889	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	688m	North
1885	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	711m	North
6684	Crown cover less than 10%	11 - Alluvial Woodland	714m	North West
6650	Crown cover less than 10%	10 - Shale Plains Woodland	741m	North West
8146	Crown cover greater than 10%	11 - Alluvial Woodland	751m	South West
8152	Crown cover greater than 10%	10 - Shale Plains Woodland	753m	South West
1879	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	764m	North East
8240	Crown cover greater than 10%	10 - Shale Plains Woodland	788m	South
7046	Crown cover less than 10%	10 - Shale Plains Woodland	789m	South
6651	Crown cover less than 10%	10 - Shale Plains Woodland	807m	North West
2003	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	810m	West
7043	Crown cover less than 10%	10 - Shale Plains Woodland	819m	South
2061	Crown cover less than 10% (urban areas)	10 - Shale Plains Woodland	853m	West
7048	Crown cover less than 10%	10 - Shale Plains Woodland	889m	South West
7012	Crown cover less than 10%	10 - Shale Plains Woodland	896m	South East
7073	Crown cover less than 10%	10 - Shale Plains Woodland	920m	South East
7076	Crown cover less than 10%	9 - Shale Hills Woodland	952m	South East
8271	Crown cover greater than 10%	10 - Shale Plains Woodland	975m	South
1905	Crown cover less than 10% (urban areas)	9 - Shale Hills Woodland	991m	North East

Ecological Constraints

170 Reservoir Road, Arndell Park, NSW 2148

RAMSAR Wetlands

What RAMSAR Wetland areas exist within the report buffer?

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

RAMSAR Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints

170 Reservoir Road, Arndell Park, NSW 2148

ATLAS of NSW Wildlife

Endangered &Vulnerable Species on the ATLAS of NSW Wildlife database, within 10km of the site?

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Amphibia	Hylidae	Litoria aurea	Green and Golden Bell Frog	No	Endangered, Protected	Vulnerable
Aves	Acanthizidae	Chthonicola sagittata	Speckled Warbler	No	Vulnerable, Protected	
Aves	Accipitridae	Hieraaetus morphnoides	Little Eagle	No	Vulnerable, Protected	
Aves	Accipitridae	Lophoictinia isura	Square-tailed Kite	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Cacatuidae	Callocephalon fimbriatum	Gang-gang Cockatoo	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Falconidae	Falco subniger	Black Falcon	No	Vulnerable, Protected	
Aves	Meliphagidae	Anthochaera phrygia	Regent Honeyeater	No	Critically Endangered Species, Protected	Critically Endangered
Aves	Meliphagidae	Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	No	Vulnerable, Protected	
Aves	Neosittidae	Daphoenositta chrysoptera	Varied Sittella	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica boodang	Scarlet Robin	No	Vulnerable, Protected	
Aves	Petroicidae	Petroica phoenicea	Flame Robin	No	Vulnerable, Protected	
Aves	Psittacidae	Glossopsitta pusilla	Little Lorikeet	No	Vulnerable, Protected	
Aves	Psittacidae	Lathamus discolor	Swift Parrot	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Aves	Psittacidae	Polytelis swainsonii	Superb Parrot	No	Vulnerable, Protected, Category 3 Sensitive Species	Vulnerable
Aves	Strigidae	Ninox connivens	Barking Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Strigidae	Ninox strenua	Powerful Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto novaehollandiae	Masked Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Gastropoda	Camaenidae	Meridolum corneovirens	Cumberland Plain Land Snail	No	Endangered	
Mammalia	Dasyuridae	Dasyurus maculatus	Spotted-tailed Quoll	No	Vulnerable, Protected	Endangered
Mammalia	Emballonuridae	Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	No	Vulnerable, Protected	
Mammalia	Molossidae	Mormopterus norfolkensis	Eastern Freetail-bat	No	Vulnerable, Protected	
Mammalia	Phascolarctidae	Phascolarctos cinereus	Koala	No	Vulnerable, Protected	Vulnerable
Mammalia	Pteropodidae	Pteropus poliocephalus	Grey-headed Flying-fox	No	Vulnerable, Protected	Vulnerable
Mammalia	Vespertilionidae	Chalinolobus dwyeri	Large-eared Pied Bat	No	Vulnerable, Protected	Vulnerable
Mammalia	Vespertilionidae	Falsistrellus tasmaniensis	Eastern False Pipistrelle	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus australis	Little Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Myotis macropus	Southern Myotis	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Scoteanax rueppellii	Greater Broad-nosed Bat	No	Vulnerable, Protected	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Apocynaceae	Cynanchum elegans	White-flowered Wax Plant	No	Endangered, Protected	Endangered
Flora	Apocynaceae	Marsdenia viridiflora subsp. viridiflora	Marsdenia viridiflora R. Br. subsp. viridiflora population in the Bankstown, Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool and Penrith local government areas	No	Endangered Population	
Flora	Ericaceae	Epacris purpurascens var. purpurascens		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Dillwynia tenuifolia		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Pultenaea parviflora		No	Endangered, Protected	Vulnerable
Flora	Fabaceae (Faboideae)	Pultenaea pedunculata	Matted Bush-pea	No	Endangered, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia pubescens	Downy Wattle	No	Vulnerable, Protected	Vulnerable
Flora	Marsileaceae	Pilularia novae-hollandiae	Austral Pillwort	No	Endangered, Protected, Category 3 Sensitive Species	
Flora	Myrtaceae	Callistemon linearifolius	Netted Bottle Brush	No	Vulnerable, Protected, Category 3 Sensitive Species	
Flora	Myrtaceae	Eucalyptus nicholii	Narrow-leaved Black Peppermint	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Syzygium paniculatum	Magenta Lilly Pilly	No	Endangered, Protected	Vulnerable
Flora	Orchidaceae	Pterostylis saxicola	Sydney Plains Greenhood	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Proteaceae	Grevillea juniperina subsp. juniperina	Juniper-leaved Grevillea	No	Vulnerable, Protected	
Flora	Proteaceae	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	No	Vulnerable, Protected	Vulnerable
Flora	Proteaceae	Persoonia nutans	Nodding Geebung	No	Endangered, Protected	Endangered
Flora	Rhamnaceae	Pomaderris prunifolia	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	No	Endangered Population	
Flora	Thymelaeaceae	Pimelea curviflora var. curviflora		No	Vulnerable, Protected	Vulnerable
Flora	Thymelaeaceae	Pimelea spicata	Spiked Rice-flower	No	Endangered, Protected	Endangered

Data does not include records not defined as either endangered or vulnerable, and category 1 sensitive species are also excluded.
NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians.
Data obtained 23/10/2015

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EIS

Land Title Records

- 2 NOV 2015

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)
ABN 82 147 943 842

P. O. Box 149
Yagoona NSW 2199

Telephone: +612 9644 1679
Mobile: 0412 169 809
Facsimile: +612 8076 3026
Email: alsearch@optusnet.com.au

30th October, 2015

ENVIRONMENTAL INVESTIGATION SERVICES
PO Box 976,
NORTH RYDE BC NSW 1670

Attention: Vittal Boggaram,

RE: **170 Reservoir Road, Arndell Park**
Ref: E28870KB

Note 1:

Current Search

Folio Identifier 200/880404 (title attached)
DP 880404 (plan attached)
Dated 27th October, 2015
Registered Proprietor:
BLACKTOWN WORKERS CLUB LIMITED

Title Tree
Lot 200 DP 880404

Folio Identifier 200/880404

Certificate of Title Volume 13563 Folio 159

Certificate of Title Volume 2848 Folio 232

Certificate of Title Volume 2415 Folio 201

*****

Summary of proprietor(s)
Lot 200 DP 880404

Year	Proprietor
	(Lot 200 DP 880404)
1998 – todate	Blacktown Workers Club Limited
(1998 – todate)	*(Current lease, originally Travelodge Developments Pty Limited, now The Trust Company Limited and sublet to Value Lodging Pty Limited shown on Folio Identifier200/880404 and Historical Folio 200/880404)*
	(Lots 30 & 30A, Section 4, DP 6796 – CTVol 13563 Fol 159)
1978 – 1998	Blacktown Workers Club Limited
	(Lots 30 & 30A, Section 4, DP 6796 – Area 12 Acres 1 Rood 20 ½ Perches – CTVol 2848 Fol 232)
1978 – 1978	Blacktown Workers Club Limited
1976 – 1978	Henry Eric Green, carrier Frank Moren, council employee Keith McKeller Queen, industrial chemist
1967 – 1976	Henry Eric Green, carrier Frank Moren, council employee Arthur George Ward, shipwright
1967 – 1967	Henry Eric Green, carrier Frank Moren, council employee Roy Frederick Cameron, supervising engineer
1929 – 1967	Francesco Rubbo, perazzo worker
1923 – 1929	Frank Wigram O'Grady, boilermaker
1918 – 1923	Thomas Smith Sugden, miner
	(Part of Portion 196, Parish of Prospect – Area 1118 Acres 2 Roods 37 ¾ Perches – CTVol 2415 Fol 201)
1913 – 1918	N.S.W. Realty Co. Limited

*****

Note 2:

Current Search

Folio Identifier 201/880404 (title attached)
DP 880404 (plan attached)
Dated 27th October, 2015
Registered Proprietor:
BLACKTOWN WORKERS CLUB LIMITED

Title Tree
Lot 201 DP 880404

Folio Identifier 201/880404

See Notes (a), (b), (c) & (d)

(a)

Folio Identifier B/332094

Certificate of Title Volume 4735 Folio 182

Certificate of Title Volume 2928 Folio 117

***

(b)

Folio Identifier 4/853940

Folio Identifier 29A/4/6796

Certificate of Title Volume 6987 Folio 128

Certificate of Title Volume 2975 Folio 75

***

(c)

Certificate of Title Volume 13563 Folio 159

Certificate of Title Volume 2848 Folio 232

Certificate of Title Volume 2415 Folio 201

***

(d)

Certificate of Title Volume 2723 Folio 51

***

Summary of proprietor(s)
Lot 201 DP 880404

Year **Proprietor**

	(Lot 201 DP 880404)
1998 – todate	Blacktown Workers Club Limited
(2010 – todate)	*(current lease to McDonald's Australia Limited shown on Folio Identifier 201/880404 and Historical Folio 201/880404)*

See Notes (a), (b), (c) & (d)

Note (a)

	(Lot B DP 332094)
1990 – 1998	Blacktown Workers Club Limited
	(Lot B DP 332094 – Area 7 Acres 2 Roods 24 ¼ Perches – CTVol 4735 Fol 182)
1978 – 1990	Blacktown Workers Club Limited
1976 – 1978	Henry Eric Green, carrier Frank Moren, council employee Keith McKeller Queen, industrial chemist
1967 – 1976	Francesco Rubbo, farmer
1967 – 1967	Henry Eric Green, carrier Frank Moren, council employee Arthur George Ward, shipwright
1967 – 1967	Henry Eric Green, carrier Frank Moren, council employee Roy Frederick Cameron, supervising engineer
1936 – 1967	Francesco Rubbo, farmer
	(Lots 32 & 32A, Section 4 DP 6796 – Area 18 Acres 0 Roods 24 Perches – CTVol 2928 Fol 117)
1935 – 1936	Francesco Rubbo, farmer
1924 – 1935	John Ramage Graham, boat store proprietor
1919 – 1924	William Edwards, gardener

*****

Note (b)

	(Lot 4 DP 853940)
1997 – 1998	Blacktown Workers Club Limited
1996 – 1997	Blacktown City Council
	(Lot 29A Section 4 DP 6796)
1989 – 1996	Paul Tabone, labourer Betty Tabone, wife
	(Lot 29A Section 4 DP 6796 – CTVol 6987 Fol 128)
1964 – 1989	Paul Tabone, labourer Betty Tabone, wife
1964 – 1964	Sapa Pty Limited
1964 – 1964	Stanislaw Galembiewski, estate agent Irene Galembiewski, wife
1960 – 1964	Stanley Ronald Hickman, bricklayer Ellen Beatrice Hickman, wife
1955 – 1960	Phoebe Edith Lindsay, widow
	(Lots 28, 28A, 29 & 29A, Section 4 DP 6796 – Area 24 Acres 3 Roods 1 Perch – CTVol 2975 Fol 75)
1919 – 1955	William George Harper, storeman

*****

Note (c)

	(Lots 30 & 30A, Section 4, DP 6796 – CTVol 13563 Fol 159)
1978 – 1998	Blacktown Workers Club Limited
	Lots 30 & 30A, Section 4, DP 6796 – CTVol 2848 Fol 232)
1978 – 1978	Blacktown Workers Club Limited
1976 – 1978	Henry Eric Green, carrier Frank Moren, council employee Keith McKeller Queen, industrial chemist
1967 – 1976	Henry Eric Green, carrier Frank Moren, council employee Arthur George Ward, shipwright
1967 – 1967	Henry Eric Green, carrier Frank Moren, council employee Roy Frederick Cameron, supervising engineer
1929 – 1967	Francesco Rubbo, perazzo worker
1923 – 1929	Frank Wigram O'Grady, boilermaker
1918 – 1923	Thomas Smith Sugden, miner
	(Part of Portion 196, Parish of Prospect – Area 1118 Acres 2 Roods 37 ¾ Perches – CTVol 2415 Fol 201)
1913 – 1918	N.S.W. Realty Co. Limited

*****

Note (d)

	(Lots 31 & 31A, Section 4 DP 6796 – Area 12 Acres 1 Rood 20 ¼ Perches – CTVol 2723 Fol 51)
1978 – 1998	Blacktown Workers Club Limited
1968 – 1978	Henry Eric Green, carrier Frank Moren, council employee Keith McKeller Queen, industrial chemist
1967 – 1967	Francesco Rubbo, farmer
1967 – 1967	Henry Eric Green, carrier Frank Moren, council employee Arthur George Ward, shipwright
1967 – 1967	Henry Eric Green, carrier Frank Moren, council employee Roy Hirsch Cameron, supervising engineer
1935 – 1967	Francesco Rubbo, farmer
1924 – 1935	John Ramage Graham, boot store proprietor
1916 – 1924	William Edwards, gardener

*****

Note 3:

Current Search

Folio Identifier 14/4/6796 (title attached)
DP 6796 (plans attached)
Dated 27th October, 2015
Registered Proprietor:
BLACKTOWN WORKERS CLUB LIMITED

Title Tree
Lot 14 Section 4 DP 6796

Folio Identifier 14/4/6796

Certificate of Title Volume 4547 Folio 52

Certificate of Title Volume 4165 Folios 79, 80 & 81

Certificate of Title Volume 2480 Folio 133

Certificate of Title Volume 2415 Folio 201

****

Summary of proprietor(s)
Lot 14 Section 4 DP 6796

Year	Proprietor
	(Lot 14 Section 4 DP 6796)
1990 – todate	Blacktown Workers Club Limited
	(Lot 14 Section 4 DP 6796 – Area 12 Acres 1 Rood 20 ¾ Perches – CTVol 4547 Fol 52)
1977 – 1990	Blacktown Workers Club Limited
1973 – 1977	Belmore Smallgoods Pty Limited
1968 – 1973	Kenneth Donner Baker, poultry farmer Winifred Agnes Baker, wife
1967 – 1968	Errol Charles Frederick Dose, engineer Winifred Agnes Baker, married woman
1943 – 1967	Ada Mary Dose
1932 – 1943	Ada Mary Dose, wife Frederick William Dose, master patternmaker
	(Lot 14 Section 4 DP 6796 – Area 12 Acres 1 Rood 20 ¾ Perches – CTVol 4165 Fols 79, 80 & 81)
1932 – 1932	Frederick William Todhunter, solicitor, mortgagee exercising power of sale
1928 – 1932	John William Bury, salesman Hilda Bury, wife Charles Gascoyne Furrell, poultry farmer
	(Lot 14 Section 4 DP 6796 – Area 12 Acres 1 Rood 20 ¾ Perches – CTVol 2480 Fol 133)
1920 – 1928	Elizabeth Franklin, wife of mining manager
1914 – 1920	Hanorah Anne Morse, wife of farmer
	(Part of Portion 196, Parish of Prospect – Area 1118 Acres 2 Roods 37 ¾ Perches – CTVol 2415 Fol 201)
1913 – 1914	N.S.W. Realty Co. Limited

*****

Note 4:

Current Search

Folio Identifier 10/818679 (title attached)
DP 818679 (plan attached)
Dated 27th October, 2015
Registered Proprietor:
BLACKTOWN WORKERS CLUB LIMITED

Title Tree
Lot 10 DP 818679

Folio Identifier 10/818679

Folio Identifier 1/326077

Certificate of Title Volume 4417 Folio 26

Certificate of Title Volume 4197 Folio 172

Certificate of Title Volume 2558 Folio 86

Certificate of Title Volume 2415 Folio 201

****

Summary of proprietor(s)
Lot 10 DP 818679

Year	Proprietor
	(Lot 10 DP 818679)
1997 – todate	Blacktown Workers Club Limited
1992 – 1997	Felic Xerri
	(Lot 1 DP 326077)
1990 – 1992	Felic Xerri, gardener
	(Part Lot B DP 321324 – Area 5 Acres – CTVol 4417 Fol 26)
1937 – 1990	Felic Xerri, gardener
1930 – 1937	Henry Charles Ledger Payten, gentleman
	(Lot B DP 321324 – Area 11 Acres 2 Roods 14 Perches – CTVol 4197 Fol 172)
1928 – 1930	Henry Charles Ledger Payten, gentleman
	(Lot 15 Section 4 DP 6796 – Area 13 Acres 2 Roods 14 Perches – CTVol 2558 Fol 86)
1916 – 1928	Henry Charles Ledger Payten, gentleman
1915 – 1916	Alice Simmonds, married woman
	(Part of Portion 196, Parish of Prospect – Area 1118 Acres 2 Roods 37 ¾ Perches – CTVol 2415 Fol 201)
1913 – 1915	NSW Realty Co Limited

****

Land & Property Information
A Division of the Department of Finance & Services

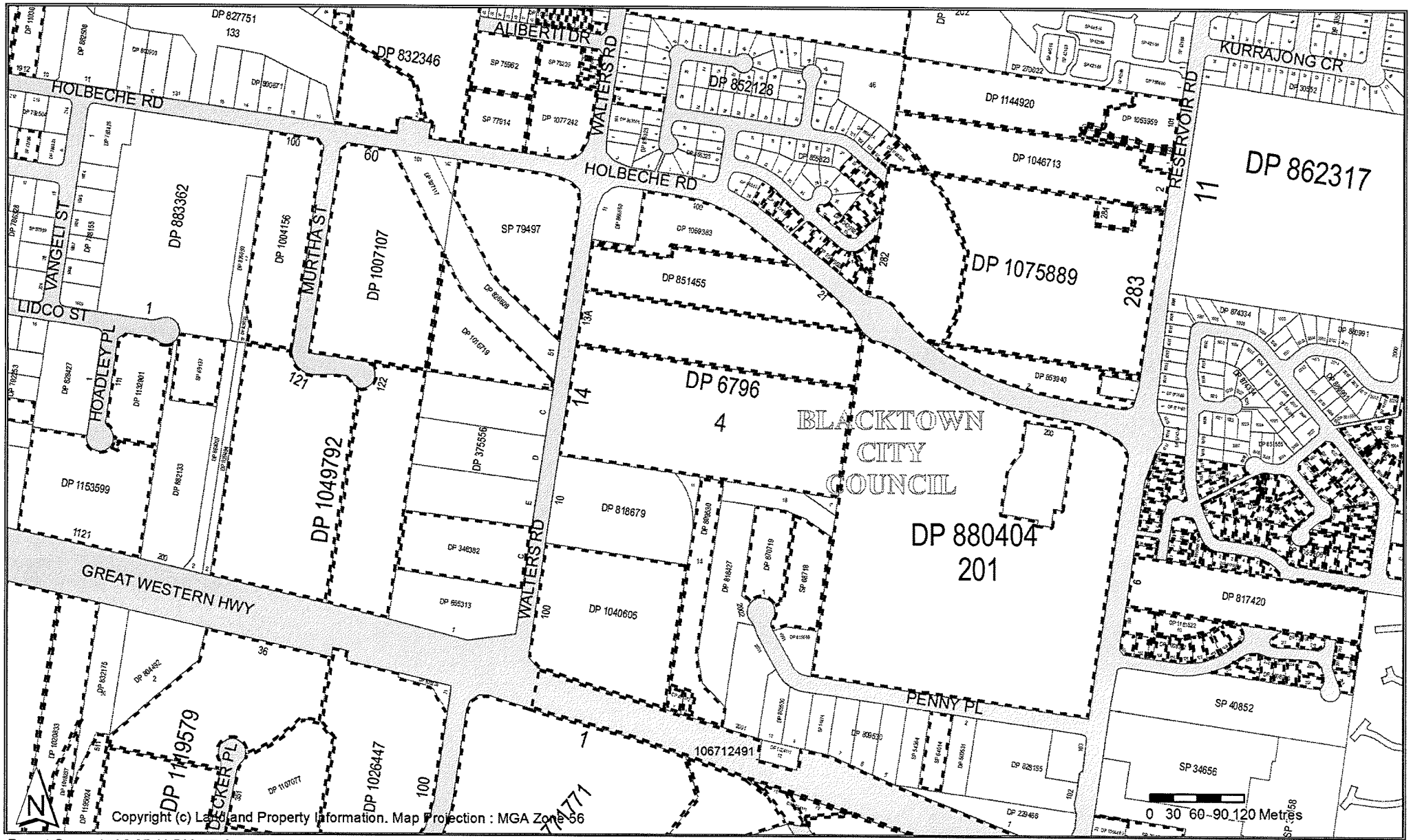
Cadastral Records Enquiry Report

Ref : EIS - Arndell Park

Requested Parcel : Lot 14 Section 4 DP 6796

Identified Parcel : Lot 14 Section 4 DP 6796

Locality : ARNDELL PARK **LGA :** BLACKTOWN **Parish :** PROSPECT **County :** CUMBERLAND



Report Generated 3:35:16 PM, 27 October, 2015

This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided. For all ACTIVITY PRIOR to SEPT 2002 you must refer to the RGs Charting and Reference Maps.

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 200/880404

SEARCH DATE	TIME	EDITION NO	DATE
27/10/2015	4:39 PM	3	7/4/1999

LAND

LOT 200 IN DEPOSITED PLAN 880404
AT ARNDELL
LOCAL GOVERNMENT AREA BLACKTOWN
PARISH OF PROSPECT COUNTY OF CUMBERLAND
TITLE DIAGRAM DP880404

FIRST SCHEDULE

BLACKTOWN WORKERS CLUB LIMITED

SECOND SCHEDULE (11 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP880404 RIGHT OF CARRIAGEWAY VARIABLE WIDTH APPURTENANT TO THE LAND ABOVE DESCRIBED
3 DP880404 EASEMENT FOR SERVICES 3 WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
4 DP880404 EASEMENT FOR UNDERGROUND CABLES APPURTENANT TO THE LAND ABOVE DESCRIBED
5 DP880404 EASEMENT FOR PADMOUNT SUBSTATION AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP880404 EASEMENT FOR SERVICES 0.5 WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
7 DP880404 EASEMENT FOR DRAINAGE OF WATER 2.5 WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
8 DP880404 EASEMENT FOR SERVICES 2.5 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 DP880404 RESTRICTION(S) ON THE USE OF LAND
10 DP880404 POSITIVE COVENANT
11 5475301 LEASE TO TRAVELODGE DEVELOPMENTS PTY LIMITED EXPIRES: 7/12/2097.
5731002 VARIATION OF LEASE 5475301
* AE983698 TRANSFER OF LEASE 5475301 LESSEE NOW TRUST COMPANY OF AUSTRALIA LIMITED
* AG172714 CHANGE OF NAME AFFECTING LEASE 5475301 LESSEE NOW THE TRUST COMPANY LIMITED
* AG172717 MORTGAGE OF LEASE 5475301 TO WESTPAC BANKING CORPORATION
* AG186751 LEASE OF LEASE 5475301 TO VALUE LODGING PTY LIMITED EXPIRES: 29/6/2020. OPTION OF RENEWAL: 4 YEARS 9 MONTHS AND 1 DAY, WITH A FURTHER TERM OF

END OF PAGE 1 - CONTINUED OVER

FOLIO: 200/880404 PAGE 2

SECOND SCHEDULE (11 NOTIFICATIONS) (CONTINUED)

TEN YEARS..

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:40PM

FOLIO: 200/880404

First Title(s): OLD SYSTEM
Prior Title(s): VOL 13563 FOL 159

Recorded	Number	Type of Instrument	C.T. Issue
4/11/1998	DP880404	DEPOSITED PLAN	FOLIO CREATED EDITION 1
18/12/1998	5475301	LEASE	EDITION 2
23/3/1999	5700856	MORTGAGE OF LEASE	
7/4/1999	5731002	VARIATION OF LEASE	EDITION 3
9/1/2001	7329018	DISCHARGE OF MORTGAGE	
16/1/2001	7351196	MORTGAGE OF LEASE	
4/10/2005	AB811593	MORTGAGE OF LEASE	
8/6/2006	AC367858	SUB-LEASE	
8/6/2006	AC367859	VARIATION OF LEASE	
17/9/2009	AE983698	TRANSFER OF LEASE	
27/11/2009	AF146143	VARIATION OF LEASE	
12/4/2011	AG172714	CHANGE OF NAME	
12/4/2011	AG172715	DISCHARGE OF MORTGAGE	
12/4/2011	AG172716	DISCHARGE OF MORTGAGE	
12/4/2011	AG172717	MORTGAGE OF LEASE	
20/4/2011	AG186751	SUB-LEASE	
20/4/2011	AG190498	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

[redacted]

CATE OF TITLE

13563159

NEW SOUTH WALES

PROPERTY ACT, 1900

Vol. 13563 Fol. 159

Appln No 14274

Prior Title Vol. 2848 Fol. 232

CANCELLED

EDITION ISSUED 14 3 1978

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

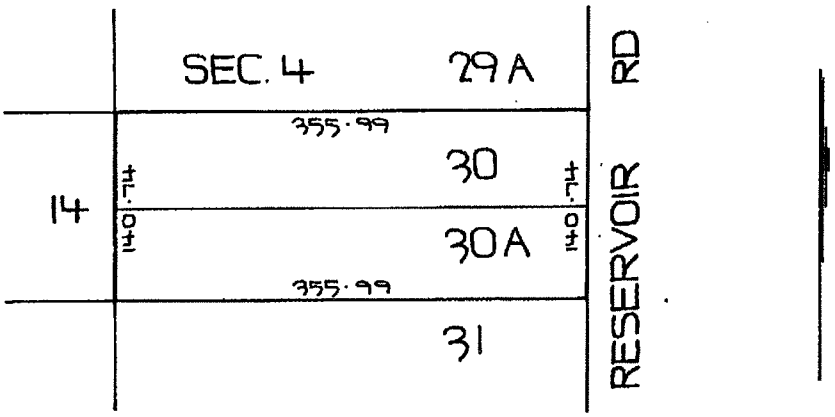
SEE AUTO FOLIO

Registrar General.

(Page 1) Vol. 13563 Fol. 159

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



Q464473 Copy

AREA : 5·009 ha
REDUCTION RATIO 1 : 4000

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lots 30 and 30A of Section 4 in Deposited Plan 6796 in the Municipality of Blacktown Parish of Prospect and County of Cumberland being part of Portion 196 granted to John Campbell on 30-6-1823.

FIRST SCHEDULE

BLACKTOWN WORKERS CLUB LIMITED.

SECOND SCHEDULE

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.

Vol. 13563 Fol. 159

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						
			CANCELLED					
			SEE AUTO FOLIO					

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

PLAN FORM 2 — Plan Drawing only to appear in this space — * OFFICE USE ONLY

SIGNATURE AND SEALS ONLY.

SURVEYORS (PRACTICE) REGULATION 1996 : CLAUSE 32 (2)				
MARK	ISG CO ORDINATES EASTING	ISG CO ORDINATES NORTHING	ACC	ZONE
P.M. 29144	289 794 · 013	1 259 941 · 069	2	561
P.M. 53578	289 621 · 847	1 259 034 · 320	2	561
P.M. 46118	290 561 · 278	1 258 655 · 445	2	561
COMBINED SEA LEVEL & SCALE FACTOR 0.99993				
I.S.G. CO-ORDINATES ADOPTED FROM LIC ON 11-2-98				

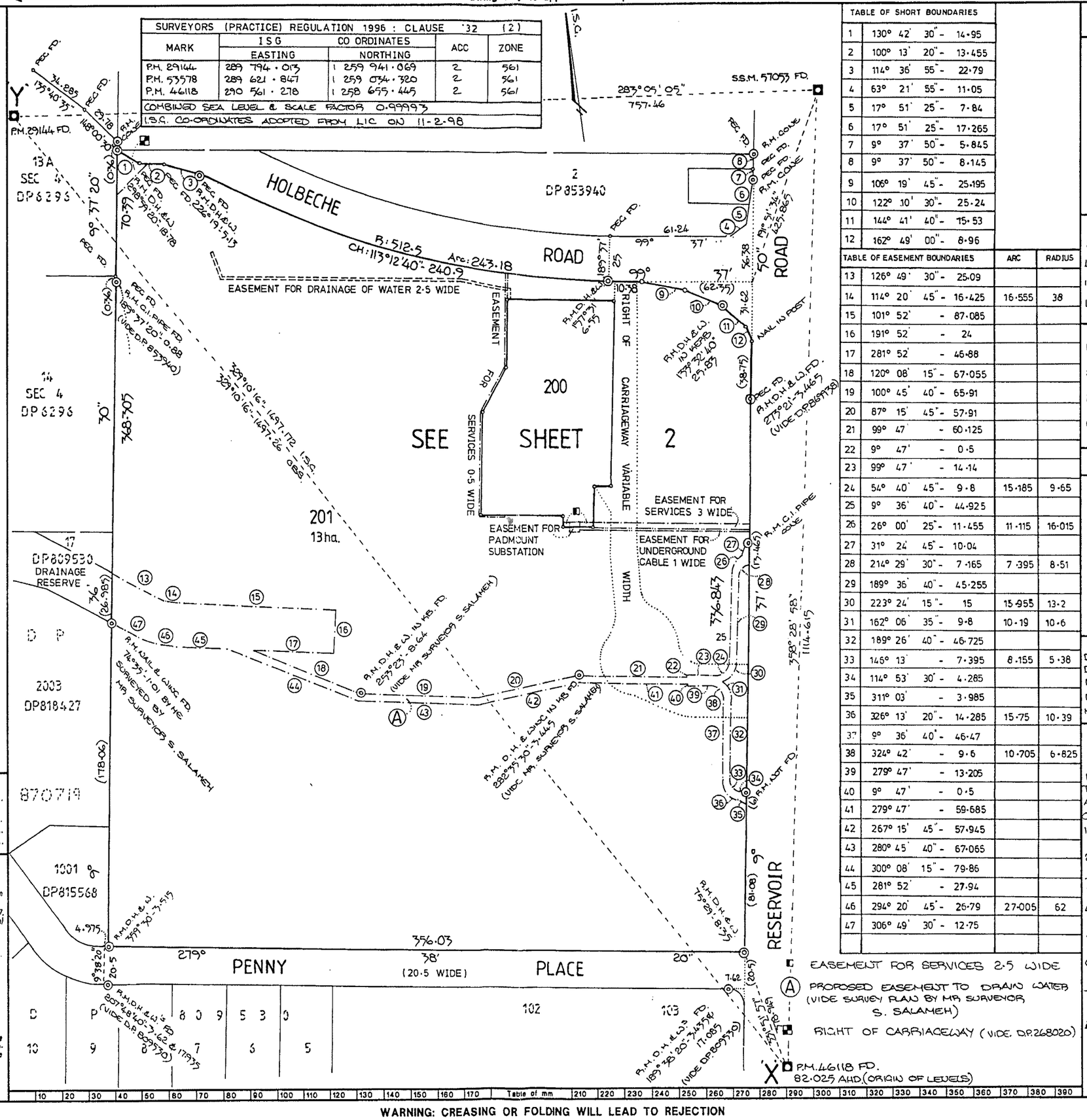


TABLE OF SHORT BOUNDARIES		
1	130° 42' 30"	14·95
2	100° 13' 20"	13·455
3	114° 36' 55"	22·79
4	63° 21' 55"	11·05
5	17° 51' 25"	7·84
6	17° 51' 25"	17·265
7	9° 37' 50"	5·845
8	9° 37' 50"	8·145
9	106° 19' 45"	25·195
10	122° 10' 30"	25·24
11	144° 41' 40"	15·53
12	162° 49' 00"	8·96

TABLE OF EASEMENT BOUNDARIES		ARC	RADIUS
13	126° 49' 30" - 25·09		
14	114° 20' 45" - 16·425	16·555	38
15	101° 52' - 87·085		
16	191° 52' - 24		
17	281° 52' - 46·88		
18	120° 08' 15" - 67·055		
19	100° 45' 40" - 65·91		
20	87° 15' 45" - 57·91		
21	99° 47' - 60·125		
22	9° 47' - 0·5		
23	99° 47' - 14·14		
24	54° 40' 45" - 9·8	15·185	9·65
25	9° 36' 40" - 44·925		
26	26° 00' 25" - 11·455	11·115	16·015
27	31° 24' 45" - 10·04		
28	214° 29' 30" - 7·165	7·395	8·51
29	189° 36' 40" - 45·255		
30	223° 24' 15" - 15	15·955	13·2
31	162° 06' 35" - 9·8	10·19	10·6
32	189° 26' 40" - 46·725		
33	146° 13' - 7·395	8·155	5·38
34	114° 53' 30" - 4·285		
35	311° 03' - 3·985		
36	326° 13' 20" - 14·285	15·75	10·39
37	9° 36' 40" - 46·47		
38	324° 42' - 9·6	10·705	6·825
39	279° 47' - 13·205		
40	9° 47' - 0·5		
41	279° 47' - 59·685		
42	267° 15' 45" - 57·945		
43	280° 45' 40" - 67·065		
44	300° 08' 15" - 79·86		
45	281° 52' - 27·94		
46	294° 20' 45" - 26·79	27·005	62
47	306° 49' 30" - 12·75		

EASEMENT FOR SERVICES 2.5 WIDE

(A) PROPOSED EASEMENT TO DRAIN WATER (VIDE SURVEY PLAN BY MR SURVEYOR S. SALAMEH)

RIGHT OF CARRIAGEWAY (VIDE. DP.268020)

DP 880404

Crown Lands Office Approval

PLAN APPROVED.....
Authorised Officer

Land District.....

Paper No.....

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

Council's Certificate

I hereby certify that –

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

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

have been complied with by the applicant in relation to the proposed Subdivision [insert 'new road', 'subdivision' or 'consolidated lot'] set out herein

Subdivision No. 9982

Date. 28th July 1998

[Signature]
General Manager/Authorised Person

Council File No. SA-01-5190

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

†Delete if inapplicable.

Consent No 15511 of 27.11.1997

SURVEYOR'S REFERENCE: 51276

DP 880404

Registered: 3.11.1998

C.A: NO 9982 OF 28-7-1998

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: 08252-32*

Last Plan DP6796, DP332094 DP853940, DP869938

PLAN OF SUBDIVISION OF LOT 301 IN D.P. 869938 & LOT 30A, 31 & 31A SECTION 4 IN D.P. 6796 & LOT B IN DP332094 LOT 4 D.P. 853940

Lengths are in metres. Reduction Ratio 1:1500

LGA: BLACKTOWN

Suburb/Locality: ABBOTSBURY PARK

Parish: PROSPECT

County: CUMBERLAND

This is sheet 1 of my plan in TWO(2) sheets. [Delete if inapplicable].

Survey Certificate *Surveyors (Practice) Regulation 1996*

I, GREGORY KEITH OXLEY

of LOVEDAY OXLEY & PARTNERS P.O. BOX 152 BLACKTOWN

a surveyor registered under the Surveyors Act 1929, hereby certify that the survey represented in this plan is accurate, has been made in accordance with the Surveyors (Practice) Regulation 1996

and was completed on 11.2.98.

This survey relates to .....

(here specify the land actually surveyed, or specify any land shown in the plan that is not the subject of the survey)

Datum Line:

Zoning: Suburban/Country (Signature) .....
Surveyor registered under the Surveyors Act 1929

Plans used in preparation of survey/~~compilation~~.
D.P. 6796, D.P. 332094, D.P. 828155, D.P. 809531, D.P. 809530, D.P. 815568 D.P. 818427, D.P. 851455, D.P. 853490 D.P. 851454, SURVEY BY MR SURVEYOR S. SALAMEH. DP 869938

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

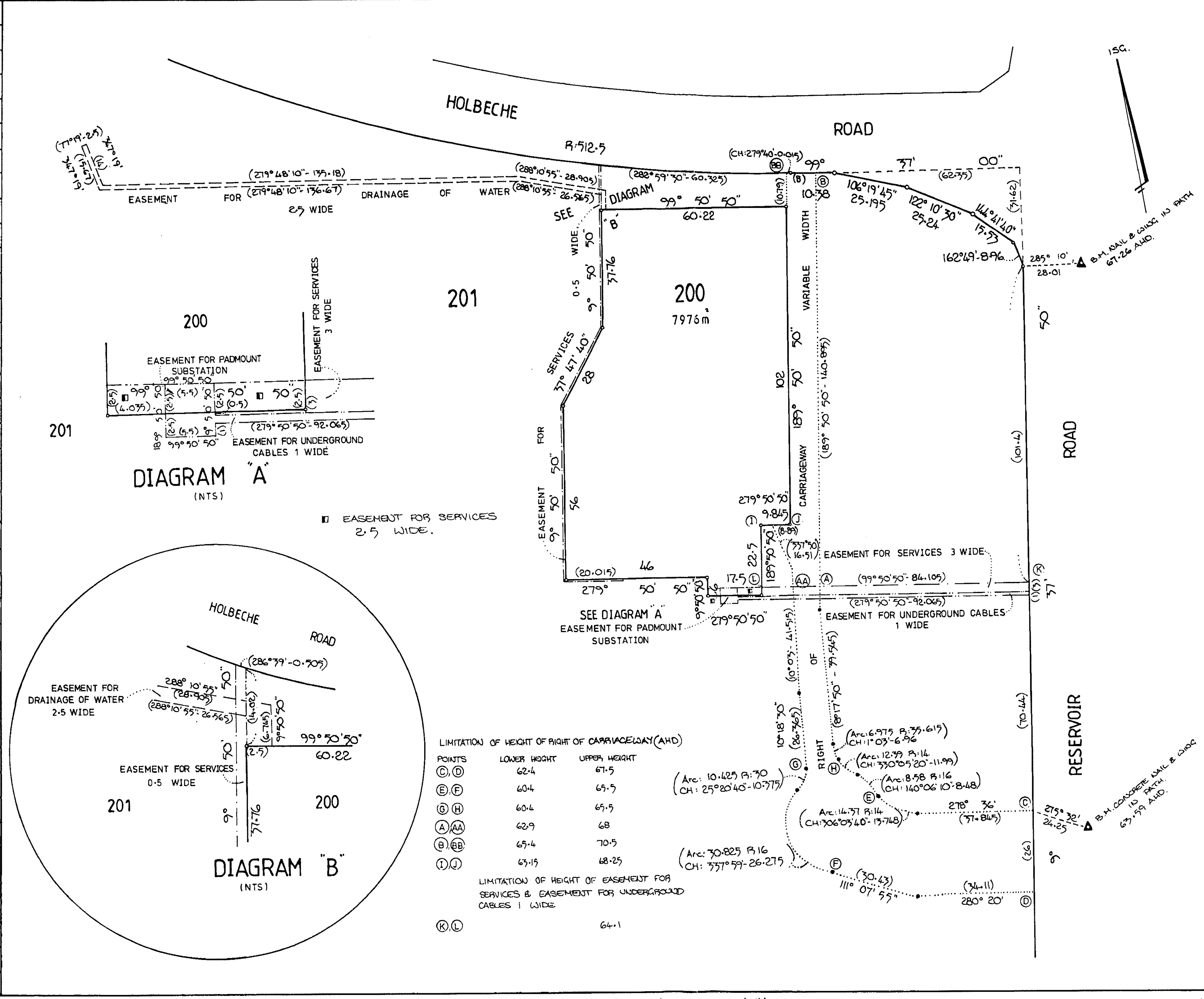
PURSUANT TO SECTION 88B OF THE CONVEYANCING ACT, AS AMENDED, IT IS INTENDED TO CREATE :-

1/ RIGHT OF CARRIAGEWAY VARIABLE WIDTH.
2/ EASEMENT FOR SERVICES 3 WIDE.
3/ EASEMENT FOR UNDERGROUND CABLES 1 WIDE.
4/ EASEMENT FOR PADMOUNT SUBSTATION.
5/ EASEMENT FOR SERVICES 0.5 WIDE.
6/ EASEMENT FOR DRAINAGE OF WATER 2.5 WIDE.
7/ EASEMENT FOR SERVICES 2.5 WIDE.
8/ RESTRICTION AS TO USER
9/ POSITIVE COVENANT

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

*OFFICE USE ONLY


HOLBECHE
ROAD
R:512·5
EASEMENT FOR DRAINAGE OF WATER 2·5 WIDE
(279°48'10"- 135·18)
(279°48'10"- 136·67)
(288°10'55"- 28·905)
(288°10'55"- 26·565)
(282°59'30"- 60·325)
(CH:279°40'-0·015)
SEE DIAGRAM "B"
99° 50' 50" 60·22
201
200
7976m²
0·5 WIDE
EASEMENT FOR SERVICES
VARIABLE WIDTH CARRIAGEWAY
RIGHT OF
106°19'45" 25·195
122° 10' 30" 25·24
144°41'40" 15·53
162°49'-8·96
285° 10' 28·01
B.H. NAIL & WASHER IN PATH 67·26 AHD.
ISG.
RESERVOIR
ROAD
EASEMENT FOR SERVICES 3 WIDE
EASEMENT FOR UNDERGROUND CABLES 1 WIDE
(99°50'50"- 84·105)
(279°50'50"-92·065)
SEE DIAGRAM "A"
EASEMENT FOR PADMOUNT SUBSTATION
279°50'50"
279° 50' 50" 46
(Arc: 10·425 R:30 CH: 25°20'40"-10·375)
(Arc: 30·825 R:16 CH: 337°59'-26·275)
(Arc: 14·37 R:14 CH:306°03'40"-13·748)
(Arc: 6·975 R:35·615 CH:1°03'-6·96)
(Arc: 12·39 R:14 CH:330°05'20"-11·99)
(Arc: 8·58 R:16 CH:140°06'10"-8·48)
278° 36' (37·845)
275°32' 24·25
B.H. CONCRETE NAIL & WASHER IN PATH 63·59 AHD.
111° 07' 55" (30·43)
280° 20' (34·11)
EASEMENT FOR PADMOUNT SUBSTATION
EASEMENT FOR UNDERGROUND CABLES 1 WIDE
EASEMENT FOR SERVICES 3 WIDE
DIAGRAM "A" (NTS)
▪ EASEMENT FOR SERVICES 2·5 WIDE.
HOLBECHE ROAD
(286°39'-0·505)
EASEMENT FOR DRAINAGE OF WATER 2·5 WIDE
EASEMENT FOR SERVICES 0·5 WIDE
DIAGRAM "B" (NTS)

LIMITATION OF HEIGHT OF RIGHT OF CARRIAGEWAY (AHD)

POINTS	LOWER HEIGHT	UPPER HEIGHT
Ⓒ,Ⓓ	62·4	67·5
Ⓔ,Ⓕ	60·4	65·5
Ⓖ,Ⓗ	60·4	65·5
Ⓐ,ⒶⒶ	62·9	68
Ⓑ,ⒷⒷ	65·4	70·5
Ⓘ,Ⓙ	63·15	68·25

LIMITATION OF HEIGHT OF EASEMENT FOR SERVICES & EASEMENT FOR UNDERGROUND CABLES 1 WIDE

POINTS		HEIGHT
Ⓚ,Ⓛ		64·1

DP 880404

Registered: 3.11.1998

This is sheet 2 of my plan in 2 sheets dated

Surveyor registered under Surveyors Act 1929

This is sheet 2 of the plan of 2 sheets covered by my Certificate No 9982 of 28.7.1998

General Manager/Authorised Person

For use where space is insufficient in any panel on Plan Form 2

DP 880404

Reduction Ratio 1: 800

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE: 51276

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 201/880404

SEARCH DATE	TIME	EDITION NO	DATE
27/10/2015	4:39 PM	5	2/11/2010

LAND

LOT 201 IN DEPOSITED PLAN 880404
AT ARNDELL
LOCAL GOVERNMENT AREA BLACKTOWN
PARISH OF PROSPECT COUNTY OF CUMBERLAND
TITLE DIAGRAM DP880404

FIRST SCHEDULE

BLACKTOWN WORKERS CLUB LIMITED

SECOND SCHEDULE (17 NOTIFICATIONS)

---

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 DP268020 RIGHT OF CARRIAGEWAY VARIABLE WIDTH AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
3 DP880404 RIGHT OF CARRIAGEWAY VARIABLE WIDTH AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
4 DP880404 EASEMENT FOR SERVICES 3 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
5 DP880404 EASEMENT FOR UNDERGROUND CABLES AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
6 DP880404 EASEMENT FOR PADMOUNT SUBSTATION AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
7 DP880404 EASEMENT FOR SERVICES 0.5 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
8 DP880404 EASEMENT FOR DRAINAGE OF WATER 2.5 WIDE AFFECTING THE PART SHOWN SO BURDENED IN THE TITLE DIAGRAM
9 DP880404 EASEMENT FOR SERVICES 2.5 WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED
10 DP880404 POSITIVE COVENANT
11 7027528 EASEMENT TO DRAIN WATER AFFECTING THE PART SHOWN AS "PROPOSED EASEMENT TO DRAIN WATER" IN DP880404
12 DP1142823 RESTRICTION(S) ON THE USE OF LAND
13 DP1142823 POSITIVE COVENANT
14 DP1142823 EASEMENT FOR PADMOUNT SUBSTATION 2.75 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1142823
15 DP1142823 RESTRICTION(S) ON THE USE OF LAND AFFECTING THE PART SHOWN SO DESIGNATED (D) IN THE S. 88B INSTRUMENT
16 DP1142823 EASEMENT FOR UNDERGROUND CABLES 1 METRE(S) WIDE AFFECTING THE PART(S) SHOWN SO BURDENED IN DP1142823
17 AF323525 LEASE TO MCDONALD'S AUSTRALIA LIMITED OF THE

END OF PAGE 1 - CONTINUED OVER

EIS - Arndell Park PRINTED ON 27/10/2015

**ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.*

FOLIO: 201/880404 PAGE 2

SECOND SCHEDULE (17 NOTIFICATIONS) (CONTINUED)

MCDONALDS RESTAURANT PREMISES CNR RESEVOIR ROAD & HOLBECHE ROAD, ARNDELL PARK AS SHOWN CROSS-HATCHED IN PLAN WITH AF323525. EXPIRES: 4/12/2018. OPTION OF RENEWAL: 5 YEARS + THREE FURTHER OPTIONS EACH OF 5 YEARS.

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:41PM

FOLIO: 201/880404

First Title(s): OLD SYSTEM
Prior Title(s): B/332094 VOL 2723 FOL 51 4/853940 VOL 13563 FOL 159

Recorded	Number	Type of Instrument	C.T. Issue
3/11/1998	DP880404	DEPOSITED PLAN	FOLIO CREATED EDITION 1
7/9/2000	7027528	TRANSFER GRANTING EASEMENT	EDITION 2
2/9/2008	AE187709	CAVEAT	
4/2/2010	AF293081	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 3
4/2/2010	DP1142823	DEPOSITED PLAN	EDITION 4
2/11/2010	AF323525	LEASE	EDITION 5

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:46PM

FOLIO: B/332094

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 4735 FOL 182

Recorded	Number	Type of Instrument	C.T. Issue
2/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
6/3/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
3/11/1998	DP880404	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:47PM

FOLIO: 4/853940

First Title(s): OLD SYSTEM
Prior Title(s): 29A/4/6796

Recorded	Number	Type of Instrument	C.T. Issue
27/10/1995	DP853940	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
22/3/1996	2021898	TRANSFER	FOLIO CREATED EDITION 1
30/5/1997	3104380	TRANSFER	EDITION 2
9/9/1997	DP268020	DEPOSITED PLAN	EDITION 3
26/10/1998	5346717	APPLICATION FOR REPLACEMENT CERTIFICATE OF TITLE	EDITION 4
3/11/1998	DP880404	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

97-01T

TRANSFER

Real Property Act, 1900

including Covena

2021898 Y

OFFICE OF STATE REVENUE (N.S.W. TREASURY) S3 1994/95 NO STAMP DUTY IS PAYABLE ON THIS INSTRUMENT

Office of Su

(A) LAND TRANSFERRED
Show no more than 20 References to Title. If appropriate, specify the share transferred.

Part Volume 6987 Folio 128 NOW BEING 29A/4/6796

part now known as Folio Identifiers: 2/853940, 3/853940 and 4/853940

(B) LODGED BY

L.T.O. Box	Name, Address or DX and Telephone
296X	J Greenwood & Co Solicitors DX 8145 BLACKTOWN Ph: 671 7211 REFERENCE (max. 15 characters): P:JLG.BCC1865

(C) TRANSFEROR PAUL TABONE and BETTY TABONE

(D) acknowledges receipt of the consideration of $1,140,500.00

and as regards the land specified above transfers to the Transferee an estate in fee simple including Covenant annexed hereto and marked "A".

(E) subject to the following **ENCUMBRANCES** 1. .... 2. .... 3. ....

(F) TRANSFEREE

T / TS (s713 LGA) / TW (Sheriff)	BLACKTOWN CITY COUNCIL of 62 Flushcombe Road BLACKTOWN NSW 2148

(G) TENANCY:

OVER

(H) We certify this dealing correct for the purposes of the Real Property Act, 1900. **DATED** ....

Signed in my presence by the Transferor who is personally known to me.

[signature]
Signature of Witness

MARIO J. AZZOPARDI
Name of Witness (BLOCK LETTERS)

26/181 Church Street Parramatta
Address of Witness

Paul Tabone
Betty Tabone
Signature of Transferor

Signed in my presence by the Transferee who is personally known to me.

....
Signature of Witness

....
Name of Witness (BLOCK LETTERS)

....
Address of Witness

CT [illegible] CANC. & REF

[signature]
Solicitor for J Greenwood
Signature of Transferee

INSTRUCTIONS FOR FILLING OUT THIS FORM ARE AVAILABLE FROM THE LAND TITLES OFFICE

CHECKED BY (office use only) ....

NCV Reg 17 18/3/96

AUSDOC Office Pty. Ltd.

*Film.

"A"

THIS IS THE ANNEXURE MARKED "A" REFERRED TO IN THE TRANSFER DATED:

FENCING COVENANT IN FAVOUR OF THE TRANSFEREE

FROM: PAUL TABONE AND BETTY TABONE (TRANSFERORS)

TO: BLACKTOWN CITY COUNCIL (TRANSFEREE)

TRANSFEREE'S COVENANT

1. No fence shall be erected on Lot 1 as burdened to divide is from any adjoining land owned by the Blacktown City Council without the consent of the Blacktown City Council but such consent shall not be withheld if such fence is erected without expense to the Blacktown City Council provided that this restriction shall remain in force only during such time as the Blacktown City Council is the Registered Proprietor of any land in the Plan or any land immediately adjoining the land in the plan.

LAND BURDENED

Lot 1, DP 853940
and the Transferors, their successors and assigns

Paul Tabone
.....
Transferor - P Tabone

Betty Tabone
Transferor - B Tabone

LAND BENEFITTED

Lots 2, 3 & 4 DP 853940
and Blacktown City Council

.....
Transferee's Solicitor

10-1280

REGISTRATION DIRECTION ANNEXURE

Use this side only for **First and Second Schedule** directions

DO NOT USE BOTH SIDES OF THE FORM.

FIRST SCHEDULE DIRECTIONS

FOLIO IDENTIFIER	DIRECTION	DETAILS
	PROP	Blacktown City Council of part being Lots 2, 3 & 4 in DP 853940 ; Paul Tabone and Betty Tabone as joint tenants of the residue being Lot 4 in DP853940

SECOND SCHEDULE AND OTHER DIRECTIONS

FOLIO IDENTIFIER	DIRECTION	NOTFN TYPE	DEALING NUMBER	DETAILS
	OFF	NB	DP818468	
	OFF	NB	DP853940	
	ON	CV		as regards part being Lot 1 in DP 853940
	ON	AA		Part of the land above described being Lot 3 in DP 853940 is required for road purposes
	ON	ZZ		New folios have been created for Lots 1, 2, 3 & 4 in DP853940
	CT	>	NO CT	

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:48PM

FOLIO: 29A/4/6796

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 6987 FOL 128

Recorded	Number	Type of Instrument	C.T. Issue
7/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
15/12/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
2/7/1992	DP818468	DEPOSITED PLAN	
27/10/1995	DP853940	DEPOSITED PLAN	
22/3/1996	2021898	TRANSFER	FOLIO CANCELLED
17/8/1999	6101903	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 14/4/6796

SEARCH DATE	TIME	EDITION NO	DATE
27/10/2015	4:39 PM	1	9/9/1997

LAND

LOT 14 OF SECTION 4 IN DEPOSITED PLAN 6796
LOCAL GOVERNMENT AREA BLACKTOWN
PARISH OF PROSPECT COUNTY OF CUMBERLAND
TITLE DIAGRAM DP6796

FIRST SCHEDULE

BLACKTOWN WORKERS CLUB LIMITED (T Q98205)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A103702 COVENANT
3 DP268020 EASEMENT TO DRAIN WATER 140.74 WIDE AFFECTING THE WHOLE OF THE LAND ABOVE DESCRIBED

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.
UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:42PM

FOLIO: 14/4/6796

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 4547 FOL 52

Recorded	Number	Type of Instrument	C.T. Issue
9/9/1989		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
20/2/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
9/9/1997	DP268020	DEPOSITED PLAN	EDITION 1

*** END OF SEARCH ***

S. BLACKTOWN

DP6796 (E)

6796

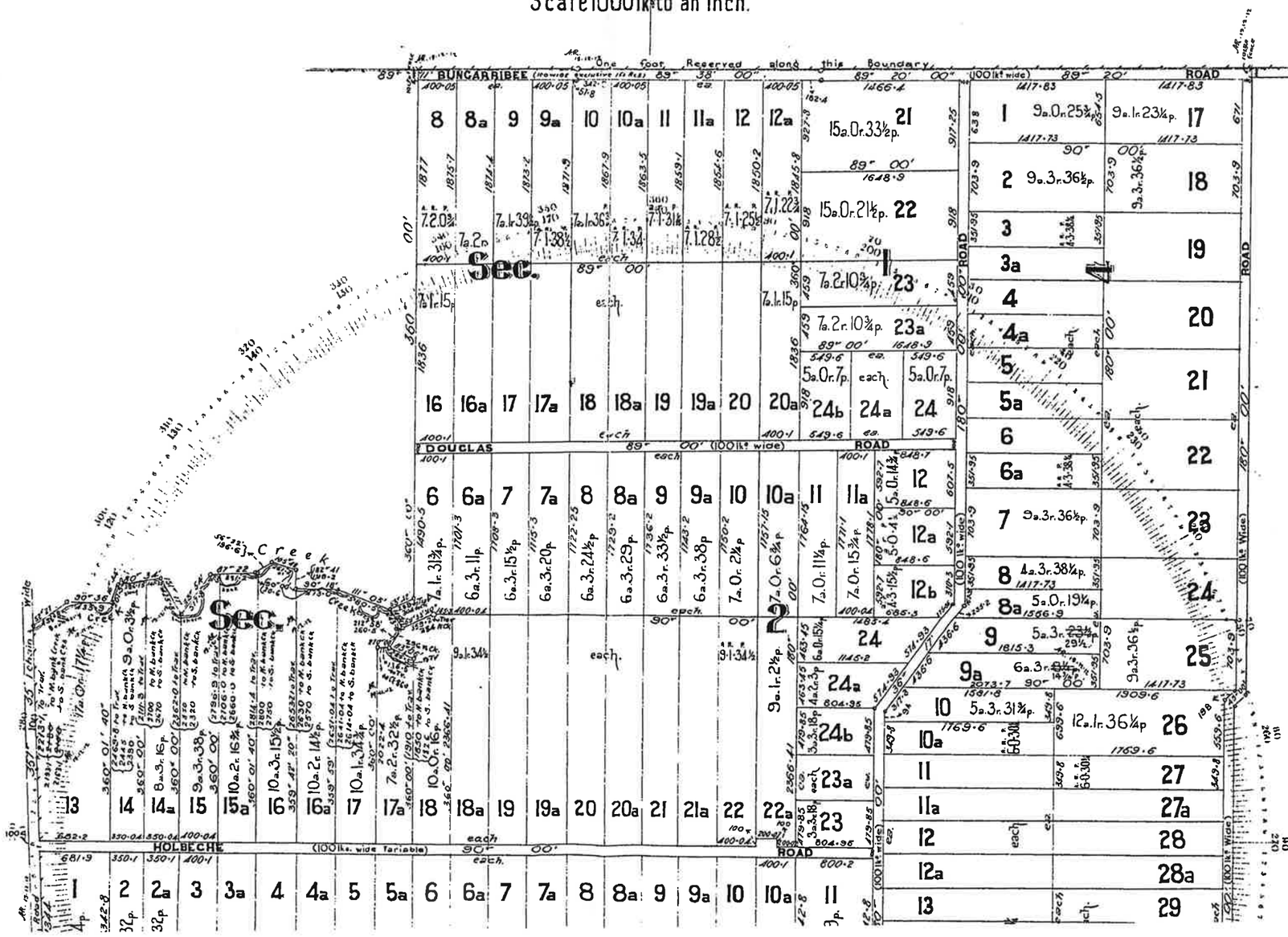
PLAN

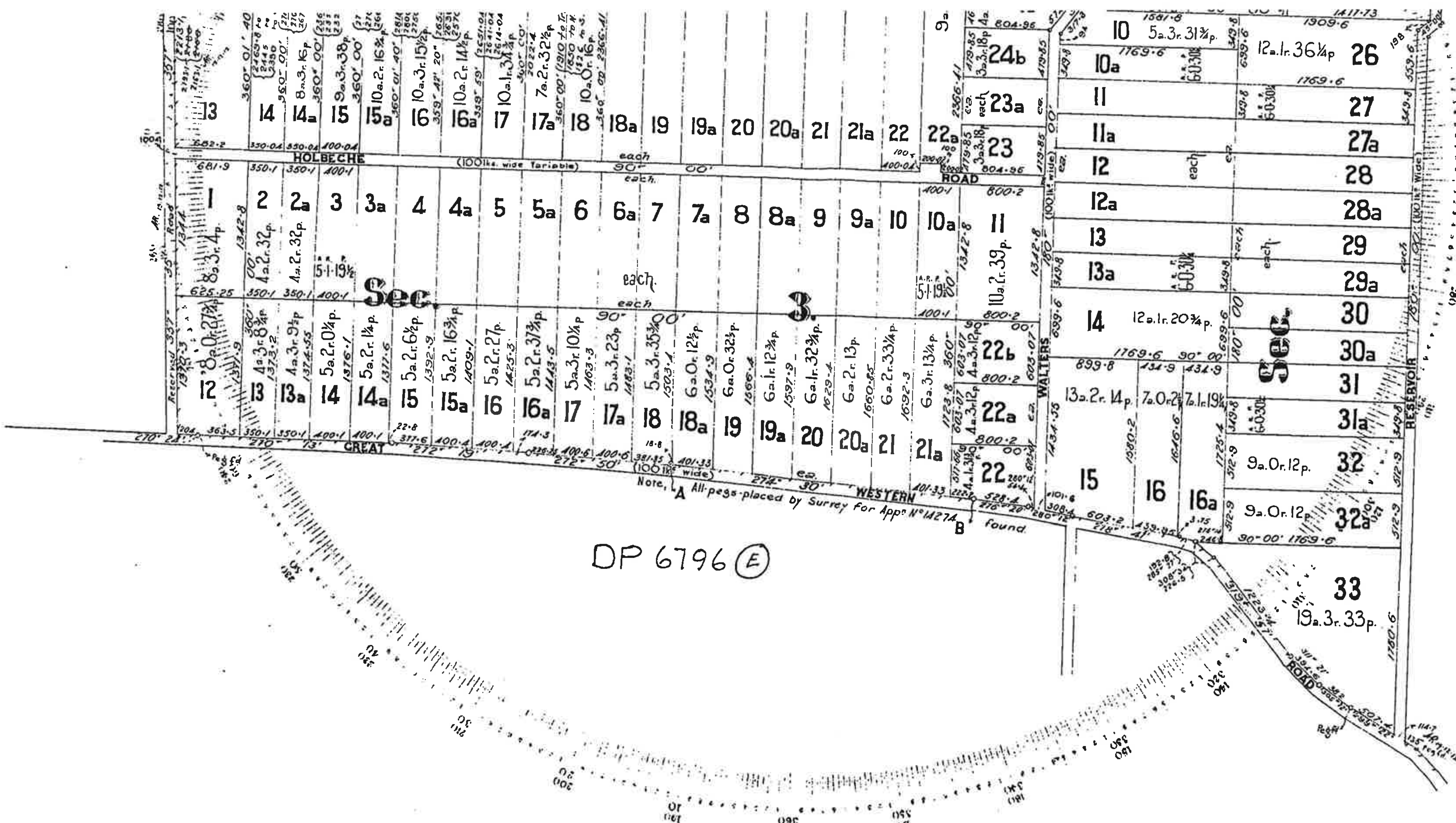
of part of land in Certificate of Title Vol. 1776 fol. 125

Shire of Blacktown

Parish of Prospect *County of Cumberland*

Scale 1000 lks to an Inch.





Approved at a meeting of the Council held on the twenty third day of October 1912.

Thomas Willmot

Hugh Reid

DECLARATION.

I Andrew Robb of 113 Pitt St Sydney Licensed Surveyor, specially Licensed under the Real Property Act, do hereby solemnly and sincerely declare that the boundaries and measurements shown on this Plan are correct for the purposes of the said Act, and that the said Plan and the survey of the land to which the same relates, have been prepared and made by me, or under my immediate supervision; and I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Oaths Act 1900

Subscribed and declared before me at Sydney this 21st day of August A.D. 1912

T. A. Rains J.P.

Andrew Robb.

Licensed Surveyor

Date of Survey April 1912

Assumed Magnetic Variation

Azimuth taken from Line A.B on Plan

DP 6796 (E)

Sec. 2

Sec. 3

DOUGLAS ROAD (100 lks wide)

HOLBECHE ROAD (100 lks. wide Variable)

GREAT WESTERN ROAD (100 lks wide)

WALTERS ROAD (100 lks wide)

RESERVOIR ROAD (100 lks Wide)

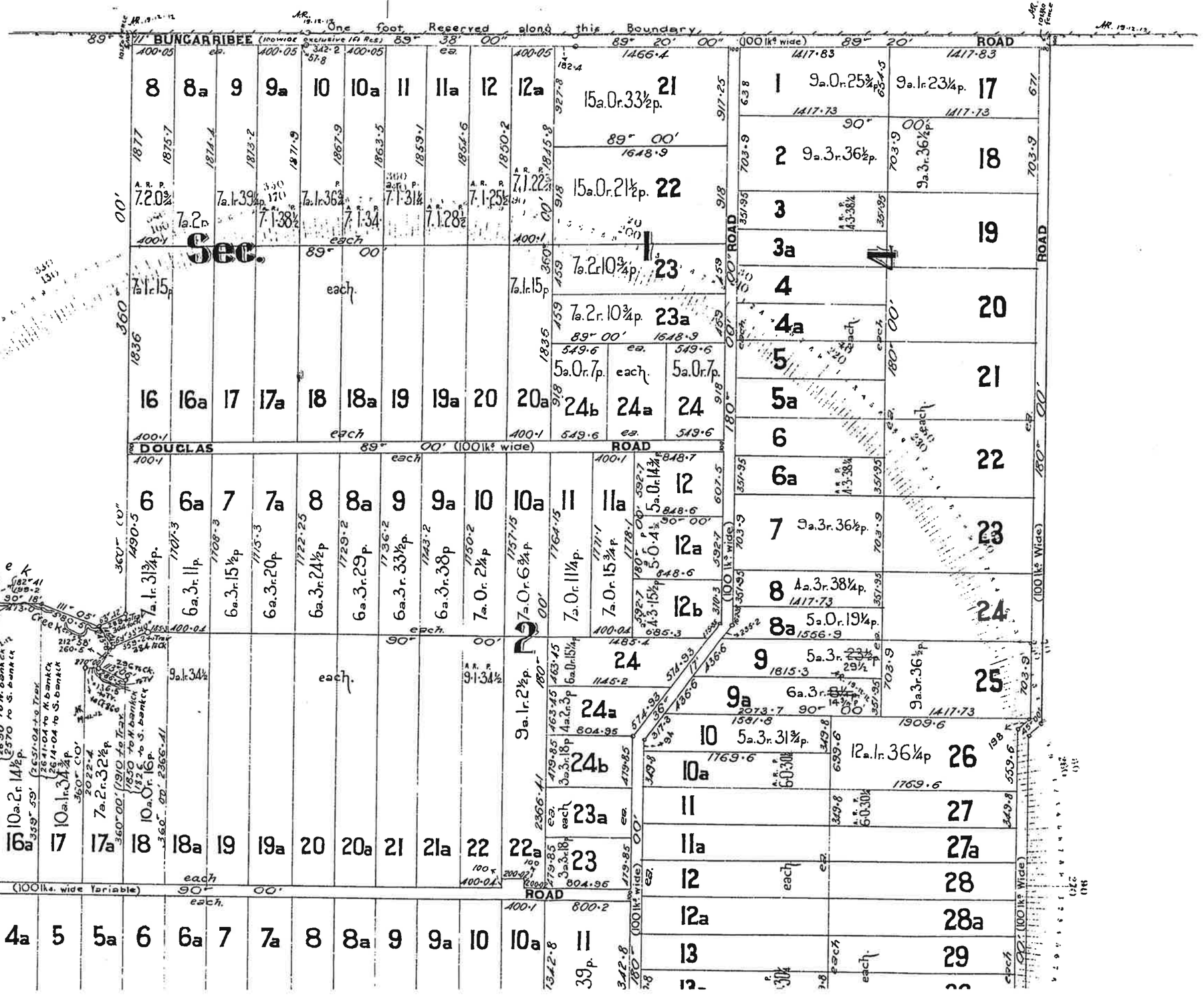
Creek

Note, A All pegs placed by Surrey for Appn N°14274 B found.

Parish of Prospect County of Cumberland

DP 6796 (E)

Scale 1000 lks to an Inch.



CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 6796

LINKS	METRES
0.4	0.08
2.8	0.565
3.75	0.755
3.9	0.785
8.8	1.77
18.8	3.78
20.6	4.145
22.8	4.585
39.95	8.035
49.8	10.02
50.1	10.08
51.95	10.45
54.4	10.945
57.8	11.625
69.96	14.075
77.6	15.61
80.02	16.095
82	16.495
86	17.3
91.8	18.465
94	18.91
100	20.115
101.6	20.44
103.9	20.9
114.7	23.075
135	27.16
136.5	27.46
147.35	29.64
162.35	32.66
174.3	35.065
182.4	36.695
185.3	37.275
192.8	38.785
196.6	39.55
198	39.83
199.2	40.075
200.02	40.24
201.3	40.495
204	41.04
220	44.255
222.2	44.7
226.25	45.515
226.35	45.535
226.5	45.565
235.2	47.315
243	48.885
246	49.485
246.8	49.65
260.5	52.4
261.2	52.54
275.85	55.49
284	57.13
286.5	57.63
289	58.14
289.4	58.22
296	59.55
296.15	59.58
299.2	60.19
304	61.16
306.07	61.57
308.4	62.04
317.3	63.83
342.2	68.84
349.8	70.37
349.83	70.37
350.04	70.42
350.1	70.43
351.92	70.8
351.95	70.8
351.96	70.8
353.5	71.11
359.2	72.26
363.5	73.12
370.3	74.49
377.6	75.96
381.2	76.69
381.85	76.82

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 6796 CONTINUED

LINKS	METRES
384	77.25
394.6	79.38
400.04	80.48
400.05	80.48
400.1	80.49
400.4	80.55
400.6	80.59
401.33	80.73
403.9	81.25
425.8	85.66
431.8	86.86
433.9	87.29
434.9	87.49
436.6	87.83
439.95	88.5
459	92.34
463.45	93.23
473	95.15
479.85	96.53
507.4	102.07
512.9	103.18
517.66	104.14
517.8	104.16
528.4	106.3
549.6	110.56
559.6	112.57
574.93	115.66
580.5	116.78
592.7	119.23
603.07	121.32
603.2	121.34
607.2	122.15
607.5	122.21
625.25	125.78
638	128.35
654.5	131.66
671	134.98
681.9	137.18
682.2	137.24
685.3	137.86
699.6	140.74
703.9	141.6
764.15	153.72
800.2	160.97
803.07	161.55
804.95	161.93
848.6	170.71
848.7	170.73
874.4	175.9
899.8	181.01
915	184.07
917.25	184.52
918	184.67
927.8	186.64
1145.2	230.38
1223.4	246.11
1342.8	270.13
1344	270.37
1370.3	275.66
1371.9	275.98
1373.2	276.24
1374.55	276.52
1376.1	276.83
1377.6	277.13
1392.9	280.21
1409.1	283.47
1417.73	285.2
1417.83	285.22
1425.3	286.72
1434.55	288.59
1443.5	290.39
1463.3	294.37
1466.4	294.99
1483.1	298.35
1485.4	298.81
1490.5	299.84
1503.4	302.44

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 6796 CONTINUED

LINKS	METRES
1534.9	308.77
1556.9	313.2
1566.4	315.11
1580.2	317.89
1597.9	321.45
1629.4	327.78
1646.6	331.24
1648.9	331.71
1660.85	334.11
1666.4	335.23
1692.3	340.44
1701.3	342.25
1701.5	342.29
1708.3	343.66
1708.8	343.76
1711.1	344.22
1715.3	345.06
1722.25	346.46
1723.8	346.77
1725.4	347.1
1729.2	347.86
1736.2	349.27
1743.2	350.68
1750.2	352.08
1757.15	353.48
1757.17	353.49
1764.15	354.89
1769.6	355.99
1771.1	356.29
1778.1	357.7
1800	362.1
1815.3	365.18
1826	367.33
1836	369.34
1845.8	371.32
1846.8	371.52
1850	372.16
1850.2	372.2
1854.6	373.09
1859.1	373.99
1863.5	374.88
1867.9	375.76
1871.9	376.57
1873.2	376.83
1874.4	377.07
1875.7	377.33
1877	377.59
1909.6	384.15
1910	384.23
2022.4	406.84
2073.7	417.16
2163.1	435.15
2193.1	441.18
2213.1	445.2
2320	466.71
2350	472.74
2361.4	475.04
2362	475.16
2366.41	476.05
2390	480.79
2445	491.86
2469.8	496.84
2570	517
2630	529.1
2641.04	531.3
2651.04	533.3
2653.2	533.7
2660	535.1
2670	537.1
2700	543.2
2706	544.4
2711.3	545.4
2750	553.2
2796.9	562.6
2814.4	566.2
2854.6	574.3

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 6796 CONTINUED

AC RD P	SQ M
- - 30 1/4	765.1
- 3 38 1/4	4003

AC RD P	HA
3 3 18	1.563
4 1 31 3/4	1.8
4 2 3	1.829
4 2 32	1.9
4 3 8 3/4	1.944
4 3 9 1/2	1.946
4 3 12	1.953
4 3 15 1/2	1.961
4 3 38 1/4	2.019
5 - 7	2.041
5 - 7 1/2	2.042
5 - 14 3/4	2.061
5 - 19 1/4	2.072
5 1 19 1/2	2.174
5 2 1/4	2.226
5 2 1 1/4	2.229
5 2 6 1/2	2.242
5 2 16 3/4	2.268
5 2 27	2.294
5 2 37 3/4	2.321
5 3 10 1/4	2.353
5 3 10.55	2.354
5 3 23	2.385
5 3 29 1/2	2.4
5 3 31 3/4	2.4
5 3 35 3/4	2.417
6 - 4 1/2	2.439
6 - 12 1/2	2.46
6 - 15 1/4	2.467
6 - 30 1/4	2.5
6 - 32 1/2	2.51
6 1 12 3/4	2.562
6 1 32 3/4	2.612
6 2 1.3	2.634
6 2 13	2.663
6 2 33 1/4	2.714
6 3 -	2.732
6 3 11	2.759
6 3 13 1/4	2.765
6 3 14 3/4	2.769
6 3 15 1/2	2.771
6 3 20	2.782
6 3 24 1/2	2.794
6 3 29	2.8
6 3 33 1/2	2.816
6 3 38	2.828
7 - 2 1/4	2.838
7 - 2 1/2	2.839
7 - 6 3/4	2.85
7 - 11 1/4	2.861
7 - 15 3/4	2.873
7 1 15	2.972
7 1 19 1/4	2.983
7 1 22 3/4	2.992
7 1 25 1/2	2.998
7 1 28 1/4	3.0
7 1 28 1/2	3.0
7 1 31 1/4	3.013
7 1 31 3/4	3.014
7 1 34	3.02
7 1 36 3/4	3.027
7 1 38 1/2	3.031
7 1 39 1/4	3.033
7 2 -	3.035
7 2 3/4	3.037
7 2 10 3/4	3.062
7 2 32 1/2	3.117
8 - 27 3/4	3.3
8 3 4	3.551
8 3 16	3.581
9 - 1.2	3.645
9 - 3 1/2	3.651

CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

DP 6796 CONTINUED

AC RD P	HA
9 - 12	3.672
9 - 25 3/4	3.7
9 1 2 1/2	3.75
9 1 23 1/4	3.8
9 1 34 1/2	3.831
9 3 36 1/2	4.038
9 3 38	4.042
10 - 16	4.087
10 1 34 3/4	4.236
10 2 14 1/2	4.286
10 2 16 3/4	4.292
10 2 39	4.348
10 3 15 1/2	4.39
12 1 20 3/4	5.01
12 1 36 1/4	5.049
13 2 14	5.499
15 - 21 1/2	6.125
15 - 33 1/2	6.155
15 - 33.53	6.155
17 - 17 1/4	6.923
19 3 33	8.076

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 10/818679

SEARCH DATE	TIME	EDITION NO	DATE
27/10/2015	4:39 PM	3	9/9/1997

LAND

LOT 10 IN DEPOSITED PLAN 818679
AT ARNDELL PARK
LOCAL GOVERNMENT AREA BLACKTOWN
PARISH OF PROSPECT COUNTY OF CUMBERLAND
TITLE DIAGRAM DP818679

FIRST SCHEDULE

BLACKTOWN WORKERS CLUB LIMITED (T 3397541)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 A161151 COVENANT
3 DP818679 RESTRICTION(S) ON THE USE OF LAND

NOTATIONS

NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO.
UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

27/10/2015 4:43PM

FOLIO: 10/818679

First Title(s): OLD SYSTEM
Prior Title(s): 1/326077

Recorded	Number	Type of Instrument	C.T. Issue
20/7/1992	DP818679	DEPOSITED PLAN	FOLIO CREATED EDITION 1
21/7/1992	E623134	DEPARTMENTAL DEALING	EDITION 2
6/6/1997	3124843	CAVEAT	
9/9/1997	3397540	WITHDRAWAL OF CAVEAT	
9/9/1997	3397541	TRANSFER	EDITION 3

*** END OF SEARCH ***

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
27/10/2015 4:44PM

FOLIO: 1/326077

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 4417 FOL 26

Recorded	Number	Type of Instrument	C.T. Issue
19/12/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
15/2/1990		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
15/6/1992	E416978	REQUEST	
20/7/1992	DP818679	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

PLAN FORM 2

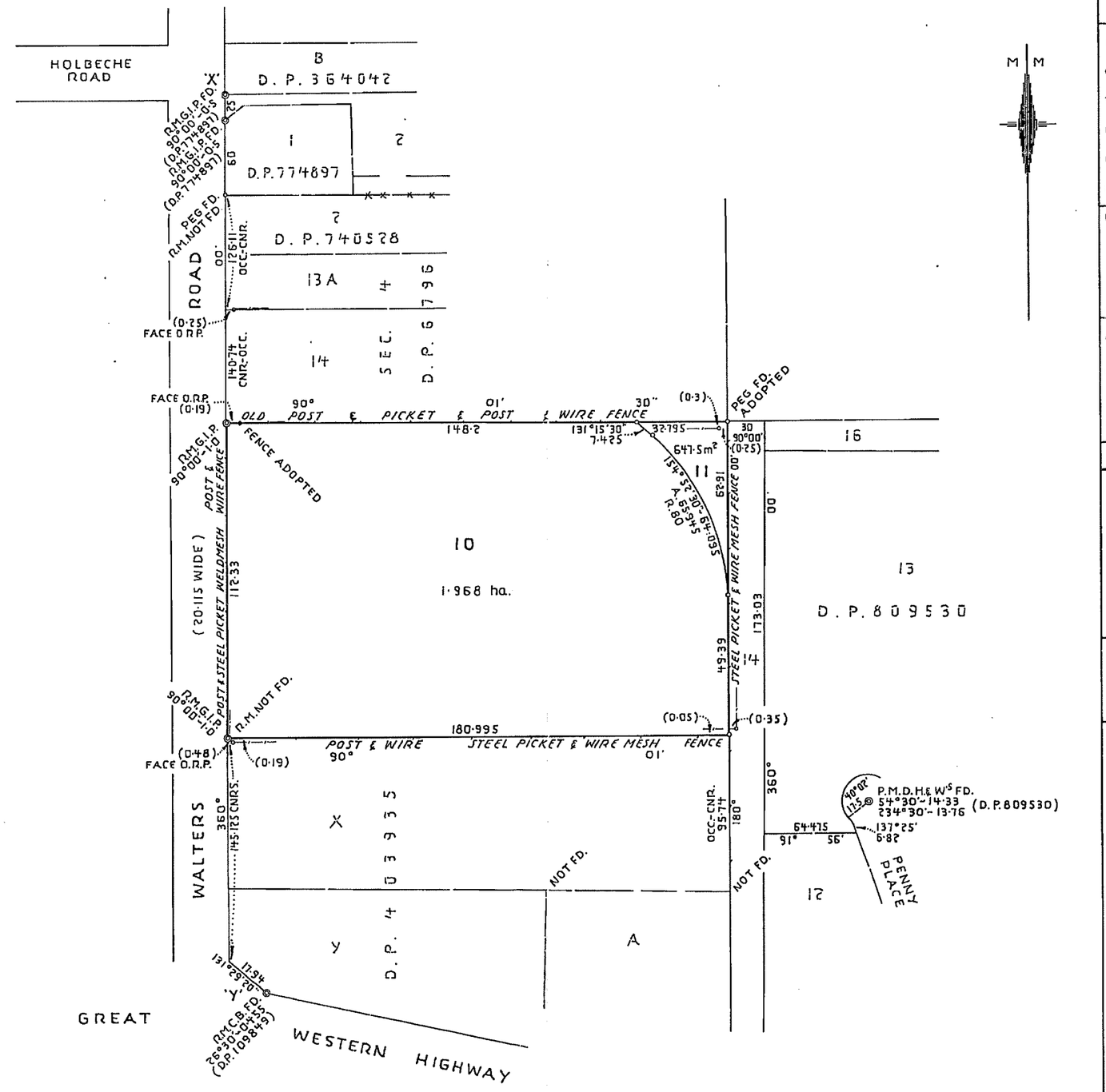
Plan Drawing only to appear in this space

*OFFICE USE ONLY

DP 818679

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

Mclie: Ward



M M

Crown Lands Office Approval

PLAN APPROVED .....
Authorised Officer
Land District .....
Paper No. .....
Field Book ..... pages .....

Council Clerk's Certificate

I hereby certify that —

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

*(b) the requirements of Part 3 Division 2 of the † Water Board Act 1987 and † Water Supply Authorities Act 1987

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

Subdivision No. 8157

Date 27-5-1992

(Signature) .....
Council Clerk

Council File No. 58-92-4

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

† Delete if inapplicable.

Consent 10302-18/3/1992

SURVEYOR'S REFERENCE: 18073

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

MPD

WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION

Registered: 15-7-1992

C.A.: No 8157 OF 27-5-1992

Title System: TORRENS

Purpose: SUBDIVISION

Ref. Map: U8252-32*

Last Plan: DP 326077

PLAN OF SUBDIVISION OF LOT 1 ~ D.P. 326077

Lengths are in metres. Reduction Ratio 1: 1000

~~Municipality~~ City: BLACKTOWN

Locality: ARNDELL PARK

Parish: PROSPECT

County: CUMBERLAND

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

I, ROBERT IVAN HORTON
of PROUST & GARDNER
406 PACIFIC HIGHWAY LINDFIELD
a surveyor registered under the Surveyors Act, 1929, as amended, hereby certify that the survey represented in this plan is accurate and has been made in accordance with the Survey Practice Regulations, 1933 and any special requirements of the Department of Lands, and was completed on 14.10.91

Signature .....
Surveyor registered under Surveyors Act, 1929, as amended.
Datum Line of Azimuth. 'X'-'Y'
#Insert date of survey.

Plans used in preparation of survey/compilation.

D.P. 326077	D.P. 740528
D.P. 403935	D.P. 6796
D.P. 809530	
D.P. 774897	
D.P. 109849	

PANEL FOR USE ONLY for statements of intention to dedicate public roads or to create public reserves, drainage reserves, easements or restrictions as to user.

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

1. RESTRICTION ON THE USE OF LAND.

10 20 30 40 50 60 70 Table of mm 110 120 130 140

This negative is a photograph made as a permanent record of a document in the custody of the Registrar General this day. 20th July 1992