



CONSULTING EARTH SCIENTISTS

STAGE I - PRELIMINARY SITE INVESTIGATION
18 RANDWICK CLOSE, CASULA, NEW SOUTH WALES
CES DOCUMENT REFERENCE: CES161003-HC-AC

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Date: 1 February 2017

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STAGE I - PRELIMINARY SITE INVESTIGATION 18 RANDWICK CLOSE, CASULA, NEW SOUTH WALES PREPARED FOR HEYMANN COHEN PTY LTD

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EXECUTIVE SUMMARY

The site (18 Randwick Close, Casula) (Lot 104 in Deposited Plan (DP) 863214) covering an area of approximately 1.3 hectares, was purchased in 2015 by Besol Pty Ltd. The site was previously owned Ingham Processing Pty Ltd and used for the processing of poultry.

The objective of the Stage I – Preliminary Site Investigation was to assess whether the site is likely to be suitable for the future mixed use and aged care development of the site or whether further investigation is required. Soil samples were collected during the geotechnical investigation (CES Document Reference: CES161003-HC-AB) and subjected to environmental testing for this preliminary site investigation report.

In order to meet the objectives of the investigation, CES has completed the following scope of works:

- Research of publicly available documentation to assess the history of the site, the identification of potential sources of contamination and the review of sensitive human and environmental receptors on or in the vicinity of the site;
- A site inspection to visually identify potential sources of contamination;
- Evaluation of data obtained from the geotechnical investigation; and
- Preparation of this Stage I – Preliminary Site Investigation.

No exceedance of human health or environmental criteria was identified in the analysis results for the fill samples from the ten borehole locations. Additionally, results were compared to NSW EPA waste classification criteria and were within the criteria for classification as general solid waste. Further sampling and analysis could confirm the fill materials to be classified as ENM and the underlying soil as VENM.

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LIST OF ABBREVIATIONS

ACM	Asbestos Containing Material
AHD	Australian Height Datum
ASS	Acid Sulfate Soil
BTEX	Benzene, Toluene, Ethylbenzene and Total Xylenes
CES	Consulting Earth Scientists Pty Ltd
CLM	Contaminated Land Management
COPC	Contaminants of Potential Concern
DECCW	Department of Environment and Climate Change and Water
DLWC	Department of Land and Water Conservation
EPA	Environment Protection Authority
ESA	Environmental Site Assessment
km	Kilometre
LGA	Local Government Area
LPI	Land and Property Information Division
LEP	Local Environmental Plan
m	Metre
mbgl	metres Below Ground Level
NEPM	National Environment Protection Measure
NSW	New South Wales
OCP	Organochlorine Pesticide
PAH	Polycyclic Aromatic Hydrocarbon
PSP	Project Safety Plan
TRH	Total Recoverable Hydrocarbons
UST	Underground Storage Tank
VOC	Volatile Organic Compounds

1 INTRODUCTION

1.1 BACKGROUND

Consulting Earth Scientists Pty Ltd (CES) was commissioned by Heymann Cohen Pty Ltd (HC) (on behalf of Besol Pty Ltd (the Client)) to carry out a Stage I – Preliminary Site Investigation of the property located at 18 Randwick Close, Casula, New South Wales (NSW) (the site) (**Figure 1**).

This report has been prepared in accordance with the CES proposal dated 7 October 2016. It has also been prepared in general accordance with the requirements specified for a Stage I – Preliminary Site Investigation as published by the NSW Environment Protection Authority (EPA) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (NSW EPA), 2011 and the National Environmental Protection Measure (NEPM) *Guidelines on Site Characterisation* (Schedule B2) 1999, as amended 2013.

CES understands that HC is considering the site for purchase with the intention of redeveloping the site for proposed mixed use and aged care development, undertaken by SummitCare.

The findings of this report are based on a site inspection conducted on 24 November 2016 and a review of environmental site data and some limited soil sampling and analysis.

1.2 OBJECTIVES

The objective of the Stage I – Preliminary Site Investigation was to assess whether the site is likely to be suitable for the future proposed mixed use and aged care development, or whether further investigation is required.

1.3 SCOPE OF WORK

CES has completed the following scope of works:

- Research of publicly available documentation to assess the history of the site, the identification of potential sources of contamination and the review of sensitive human and environmental receptors on or in the vicinity of the site;
- A site inspection to visually identify potential sources of contamination;
- Evaluation of soil sampling and analysis data obtained from geotechnical investigation; and
- Preparation of this Stage I – Preliminary Site Investigation.

2 SITE INFORMATION

The site information presented below is based on a review of government and publicly available information sources.

2.1 *SITE IDENTIFICATION*

The site is located at 18 Randwick Close, Casula, New South Wales (NSW) 2170, within the Local Government Area (LGA) of Liverpool. The site covers an area of approximately 1.3 hectares, and is legally identified as a single lot, Lot 104 in Deposited Plan (DP) 863214 (**Figure 1**). The geographical extent of the site is presented in Table 2.1 below.

Table 2.1: Geographical extent of site

Corner/point of site	Eastings	Northings
Southeast corner of site	305670mE	6241732.88mN
Northeast corner of site	305688.92mE	6241763.18mN
Southwest corner of site	305590.52mE	6241660.05mN
Northwest corner of site	305627.56mE	6295070.50mN
Western point of site	305538.63mE	6241737.21mN
Centre of site	305626.49mE	6241723.03mN

2.2 *SITE ZONING*

Liverpool Local Environmental Plan (LEP) 2008 indicates that the site is currently zoned “R4 – High Density Residential”.

2.3 *SITE DESCRIPTION*

The subject site is located within a mixed public recreation and residential district of Casula. The site is accessed via Randwick Close and is largely trapezoidal in shape. At the time of the site inspection, the property included:

- Open space with stockpiled timber material along the centre of the northern boundary. No buildings were observed on site at the time of the site inspection.

During the site inspection there were no signs of distressed vegetation (an indication of potential environmental impacts) and in the accessible areas observed, no surface staining indicative of surface spills that could have impacted underlying soil and groundwater.

There was no evidence of above ground or below ground fuel storage tanks on the site.

A photographic log is presented in **Appendix A**.

2.4 *SURROUNDING LAND USE*

Based on observations from the site inspection, the surrounding land use comprised the following:

- **North** – Kurrajong Road runs parallel with the northern boundary of the site, and further south lies residential properties and Lurnea High School (approximately 430m north-northwest);
- **East** – Daruk Park lies to the east of the site, and adjacent, Casula Mall shopping centre, lying further east. Beyond Casula Mall are residential properties.
- **South** – Single and double story residential properties, Liverpool City Council Library (approximately 150 m south-southeast) and Casula High School (approximately 550m southwest); and
- **West** – Immediately bordered by single and double story residential properties and the M5 Motorway, Prestons Public School (approximately 500m west) and NTL Transmitting Station (approximately 1.1km west-northwest). Further west lies an industrial area.

2.5 TOPOGRAPHY

The site was observed during the site inspection to have a downward east facing slope.

2.6 SURFACE WATER

The nearest surface water features are Georges River, located approximately 1,540 m east of the site boundary. The likely discharge point for groundwater / surface water run-off, based on local topography is Georges River.

2.7 GEOLOGY

Reference to the Penrith 1:100 000 Geological Series Sheet 9030 (1991) indicates that the majority of the site is underlain by Bringelly Shale of the Wianamatta Group of Middle Triassic Age. This formation typically comprises of shale, carbonaceous claystone, claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff. The nature of the formation is considered alluvial and estuarine.

2.8 HYDROGEOLOGY

It is expected that groundwater would flow to the east, towards Georges River.

A search of the Department of Primary Industries Office of Water database (<http://allwaterdata.water.nsw.gov.au/water.stm>, accessed 28 November 2016) indicates there are nine registered groundwater abstraction wells located between 1,590 and 1,921 m from the site boundary. All nine wells are used for monitoring and extend between 5.5 and 22.8 m below ground level. The groundwater standing water level is not provided. Further details are provided within the Lot Search report in **Appendix B**.

2.9 SENSITIVE LOCAL ENVIRONMENTS

The site is not located within an Underground Petroleum Storage System (UPSS) environmentally sensitive zone. UPSS environmentally sensitive zones represent areas that are likely to be vulnerable to the contamination from leaking UPSS due to geology or groundwater properties.

2.10 ACID SULFATE SOILS

The classification of acid sulphate soils (ASS) is based on the likelihood that these soils will be present in particular areas at specific depths. Soils are classed from 1 (high probability presence) to 5 (low probability presence).

There is no acid sulfate soil risk mapped for the site in the Liverpool LEP (2008) Acid sulfate soils map (sheet: ASS-013)

2.11 METEOROLOGY

Information on meteorology has been obtained from the Bureau of Meteorology website (<http://www.bom.gov.au/> accessed 28 November 2016).

- Mean annual temperature – 23.2 degrees Celsius;
- Mean annual lowest temperature – 12.0 degrees Celsius; and
- Mean annual rainfall – 648.2 millimetres (mm).

2.12 NSW CONTAMINATED SITE REGISTER

The site is located within proximity to one site listed under the NSW EPA Contaminated Lands List:

- Caltex Service Station located 971m south;

2.13 PREVIOUS ENVIRONMENTAL REPORTS

CES is not aware of any pre-existing environmental reports pertaining to the site.

3 SITE HISTORY

Information pertaining to the history of the site was obtained through a review of information available from external sources including historical title searches, aerial photographs and council records and WorkCover NSW Dangerous Goods search presented in **Appendices B** and **C**.

3.1 PROPERTY TITLE INFORMATION

A title deeds search was conducted by Lot Search. A summary of the results is provided in **Table 3.1**. Where available, the original title and lease documents are provided in **Appendix D**.

Table 3.1: Summary of Proprietors

Date	Proprietor
2015 – to date	Besol Pty Ltd
2014-2015	Inghams Property Management Pty Limited
2008 – 2014	Inghams Enterprises Pty Ltd
1996 – 2008	Inghams Processed Poultry Pty Ltd
	(Lot 1707 DP 827089)
1992 – 1996	Inghams Processed Poultry Pty Ltd

Date	Proprietor
	(Lot 2 DP 775813)
1988 – 1992	Inghams Processed Poultry Pty Ltd
	(Lot 60 DP 738407)
1986 – 1988	Inghams Processed Poultry Pty Ltd
	(Lot 248 DP 717422)
1985 – 1986	Inghams Processed Poultry Pty Ltd
	(Lots 24 to 27 DP 7507 – CTVol 9726 Fol 148)
1985 – 1985	Inghams Processed Poultry Pty Ltd
1966 – 1985	Ingham Enterprises Pty Limited
1964 – 1966	John Horace Ingham, poultry farmer Robert Walter Ingham, poultry farmer
	(Lots 24 to 27 DP 7507 – Area 42 Acres 2 Roods 27 Perches – CTVol 3399 Fol 152)
1954 – 1964	John Horace Ingham, poultry farmer Robert Walter Ingham, poultry farmer
1925 – 1954	Walter Horace Ingham, poultry farmer
1922 – 1925	Walter Henry Ingham, poultry farmer Walter Horace Ingham, poultry farmer
	(Portion 271 Parish St Luke – Area 304 Acres 2 Roods 29 ¼ Perches – CTVol 1152 Fol 19)
1922 – 1922	William Cope, grazier & solicitor
1895 – 1922	Francis Henry Biddulph, merchant

A review of the past owners of the site indicates that there may have been site uses that would have resulted in potential contamination at the site (e.g. poultry hatcheries and processing).

3.2 *HISTORICAL AERIAL PHOTOGRAPH INTERPRETATION*

Aerial photographs taken from 1930 to 2014 were obtained from Lot Search and reviewed to assess the history of development of the site and indications of potential sources of contamination. **Table 3.2** presents a summary of the review. The photographs are included in **Appendix B**.

Table 3.2: Aerial Photograph Interpretation

Year	Description
1955	Site: The site consists of open space with coverage of trees. Surrounds: The surrounding spaces around the site consist of mainly open spaces (north and west) and crops (south and east).
1961	Site: The majority of area of the site has been cleared, with only the western portion remaining open space. Surrounds: A dam has been constructed to the west of the site and additional structures have been built south-west of the site. The remaining surrounding areas have no observable changes.
1965	Site: The construction of a large building (shed) in the northern half of the site. Surrounds: Land to the north-west of the site has been cleared. A smaller building to the south of the site has occurred since the previous photograph was taken. The remaining surrounding areas have no observable changes.
1970	Site: Two more large sheds have been constructed adjoining the original shed. Surrounds: A larger building has replaced the smaller building to the south of the site since the previous photograph was taken. All surrounding crops to the south of the site have been cleared.

Year	Description
1982	<p>Site: The site appears largely unchanged.</p> <p>Surrounds: The surrounding area to the south has been cleared further, and all farming buildings to the east have been demolished. Residential areas have been constructed north of the site since the previous photograph was taken.</p>
1991	<p>Site: The site appears largely unchanged, with the exception of a residential building being constructed in the south-eastern corner of the site.</p> <p>Surrounds: Residential development has expanded to the area immediately south of the site, replacing the large building previously occupying the immediate south of the site. A large building (presumed to be the original Casula Mall) has been constructed the east of the site.</p>
2004	<p>Site: The site appears largely unchanged, with the exception of an additional residential building being constructed in the south-western corner of the site.</p>
2004	<p>Surrounds: The surrounding areas of the site have remained largely unchanged, with the exception of the newly constructed M5 motorway and bridge to the northwest of the site and the expansion of Casula Mall. Further residential development to the southwest of the site and the construction of Liverpool City Council Library to the southeast is also apparent,</p>
2009	<p>Site: The site appears largely unchanged.</p> <p>Surrounds: The surrounding area appears largely unchanged, with the exception of residential development appearing to the west of the M5 Motorway.</p>
2014	<p>Site: The site appears largely unchanged.</p> <p>Surrounds: The surrounding area appears largely unchanged.</p>

A review of the historical aerial photographs obtained from Lot Search revealed the site has been in use for poultry processing from 1965 to 2014. The review also indicates the surrounds of the site did not undergo many noteworthy changes until 2004 when the construction of the M5 motorway commenced.

3.3 **WORKCOVER NSW RECORDS**

A search of the WorkCover NSW Stored Chemical Information Database and microfiche records is provided in **Appendix C**. The search resulted in no records being found pertaining to the site.

3.4 **SECTION 149 PLANNING CERTIFICATES**

Review of Planning Certificates under Section 149 of the Environmental Planning and Assessment Act (1979) indicates the following for the subject site:

- The land has not been proclaimed as within a Mine Subsidence District;
- The land is not biodiversity certified land;
- The land does not include or comprise critical habitat;
- The land is not in a conservation area;
- The land has not been identified as bush fire prone land; and
- Development on the land is not subject to flood related development controls.

The following matters are prescribed under section 59 (2) of the Contaminated Land Management Act (1997):

-
- The land is not significantly contaminated;
 - The land is not subject to a management order;
 - The land is not subject of an approved voluntary management proposal;
 - The land is not subject to an on-going maintenance order; and
 - The land is not subject to an audit statement.

A copy of the Section 149 certificates is provided in **Appendix E**.

3.5 SEWER AND SERVICE PLANS

A review of Dial-Before-You-Dig (DBYD) plans indicate the presence of two sewer property connection points along the eastern boundary in the north of the site which may serve as a preferential pathway of contaminant migration on the site. In addition, the site inspection conducted on the 24 November 2016 found evidence of PVC conduits within brick constructed pits in three locations along the eastern boundary of the site, two of which are covered with metal road plates (see Appendix A, Plate 5 and Plate 6 for photographs). It is unclear the purpose of these conduits and the extent of the pipeline, however it is a possibility that these conduits have connected to the sewer line during past uses at the site.

A copy of the Dial Before You Dig plans are included in **Appendix F**.

3.6 SITE WALKOVER

CES carried out a site walkover on 24 November 2016. The following was identified:

- No buildings were observed on-site.
- No evidence of below or above ground fuel storage tanks were observed (e.g. manhole covers, vent stacks, fill points or bowsers);
- No significant odours were detected;
- No evidence of chemical storage was observed;
- Vegetation across the site appeared dry and brown in some areas, however, it did not appear stressed;
- A tap and water meter were identified on the northern boundary of the site;
- Three small trenches (approximately 1 square metre), constructed of bricks, two of which were covered with metal road plates and the third with no cover, were observed along the eastern boundary of the site containing PVC conduits openings; and
- Three pre-existing groundwater monitoring bores (previously installed by CES) were visible during the site walkover.

4 PRELIMINARY CONCEPTUAL SITE MODEL

A Preliminary Conceptual Site Model (CSM) was developed in consideration of the historical information and current site conditions. The CSM takes into account the possible future residential redevelopment.

4.1 *POTENTIAL SOURCES OF CONTAMINATION*

Historic Agricultural/ Commercial Activities

The historical review and site inspection suggests the site has been occupied by agricultural and commercial operators including poultry processing plant. The use of petroleum products such as fuels, oils, and hydraulic oils, as well as the use of pesticides may be associated with this use. Elevated nutrient levels may also be associated with waste products of poultry processing activities. Contaminants of potential concern (COPC) include:

- Petroleum hydrocarbons (TRH/BTEX);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Volatile Organic Hydrocarbons (VOCs);
- Organophosphate Pesticides;
- Nutrients; and
- Heavy Metals.

Uncontrolled Fill

The site slopes moderately to the northeast and it is assumed some cut and fill activities would have occurred during the development of the site. The origin of the fill is unknown and the potential exists for this material to be contaminated. COPC typically encountered in uncontrolled fill include:

- TRH and BTEX;
- PAHs;
- Heavy Metals;
- Organochlorine Pesticides (OCPs);
- Polychlorinated biphenyls (PCBs) and
- Asbestos.

4.2 *POTENTIAL OFF-SITE SOURCES OF CONTAMINATION*

There have been no potential off-site sources of contamination identified within the surrounds of the site.

4.3 *POTENTIAL PATHWAYS*

The pathways through which contaminants may reach receptors are in part dependent on the nature and behaviour of the contaminant. The following potential pathways have been identified:

- Ingestion / dermal contact during construction;
- Inhalation of contaminants in the particulate form (dust);
- Leaching of contaminants from site soils into groundwater; and
- Lateral migration of contaminants in groundwater (dissolved and immiscible phases) to surface waters.

4.4 *RECEPTORS*

Potential sensitive receptors (on and off-site) are listed below:

- Future construction workers during the construction of the proposed redevelopment;
- Future residents and employees;
- Groundwater beneath the site; and
- Neighbouring residents.

5 *SAMPLING AND ANALYTICAL PROGRAMME*

The following sampling programme has been carried out based on the CES Fee Proposal (CES Document Reference: CES161003-HC-AA) dated 7 October 2016, knowledge of the potential contamination issues resulting from past activities undertaken at the site and takes into consideration the objectives of the environmental investigation. The sampling and analysis programme only assesses the contamination status of fill and natural soil.

5.1 *SAMPLING PATTERN*

To determine the degree of potential contamination across the site, CES carried out a systematic sampling pattern where sampling points were selected at regular and even intervals, within the constraints of the site.

The location of the boreholes is presented in Figure 2.

5.2 *SAMPLING DENSITY*

A total of ten assessment locations were identified

5.3 *DEPTH INTERVALS OF SAMPLING*

Soil samples were collected from the fill. Details on sample locations and depths are presented in Table 1.

5.4 *METHOD OF SAMPLING COLLECTION*

Care was taken to ensure that representative samples are obtained from the depth required and that the integrity is maintained.

All soil samples were collected directly from the hand auger using new nitrile gloves. Care was taken when collecting auger samples to ensure the most representative sample of the targeted material was sampled.

The soil was transferred to the sample jar using new nitrile gloves.

5.4.1 *Decontamination Procedures*

The following decontamination procedures were adopted for the sampling equipment.

5.4.1.1 Sample Containers

The soil samples were collected in laboratory prepared glass jars with a Teflon lined lids. The jars were completely filled with soil, sealed, labelled with the job number, date, unique sampling point identification and depth. Details of sample containers, preservation requirements and holding times are presented as Table 2.

5.5 METHOD OF SAMPLE STORAGE AND HANDLING

The full soil jars were immediately placed in a cool box in which ice had been added to keep the samples below a temperature of approximately 4°C. Samples were then transported directly to the laboratory.

5.6 DOCUMENTATION

While on site, the supervising engineer/scientist filled out a copy of CES “sample register”, which documents:

- Time of sample collection;
- Weather;
- Unique sample identification number; and
- Sample location and depth.

All samples were classified in the field based on soil/fill characteristics and obvious signs of contamination such as discolouration or odour were noted on a log.

All samples, including QA samples, were transported to the primary and check laboratories under Chain-of Custody procedures and maintained in an ice-filled cooler. The COC details the following information:

- Site identification;
- The sampler’s name;
- Nature of the sample;
- Collection time and date;
- Analyses to be performed;
- Sample preservation method;
- Departure time from site; and
- Dispatch courier(s)

During excavation, a borehole log was completed by a qualified geotechnical engineer. The log recorded the following data:

- Sample number and depth;
- Soil classification, colour, consistency or density, and moisture content;
- Unusual characteristics such as odour and staining;
- Depth of excavation;
- Push tube rig refusal;
- Groundwater well installation details (where relevant);
- Method of excavation; and
- The depth of first encountered free water.

Borehole logs are presented as **Appendix G**.

5.7 ANALYTICAL PROGRAMME

5.7.1 Number of Samples for Analysis

A total of ten soil samples for were scheduled for analysis. The analytical programme is summarised below:

- Ten soil samples for TRH, BTEX, Heavy Metals, PAH, OCPs, OPPs, PCBs, and Asbestos;
- Quality control one blind replicate and one split replicate samples analysed for TRH, BTEX, Heavy Metals, PAH, OCPs, OPPs, PCBs, and Asbestos;
- One trip spike per day for TRH and BTEX; and
- One trip blank per day for TRH and BTEX.

5.7.2 Laboratory

CES used Envirolab Services Pty Ltd (Envirolab) as the primary lab and Australian Laboratory Services Pty Ltd (ALS) as the secondary or ‘check’ laboratory for all chemical testing. Both laboratories are NATA registered for the chemical testing.

5.7.3 Analytical Methods

The soil/fill was analysed in accordance with NEPC 1999 (2013) Guideline on Laboratory Analysis of Potentially Contaminated Soils using US EPA and APHA approved analytical methods and will provide analytical results consistent with amended NEPM. That is to say the results for TRH will be presented as the four fraction bands (F1-F4) and speciated PAHs, including benzo(a)pyrene toxicity equivalent quotient (TEQ). Asbestos was analysed in accordance with Australian Standard 4964-2004.

A list of analytical parameters, laboratory Practical Quantitation Limits (PQLs) and laboratory methods are presented as **Table 3**

6 SITE ASSESSMENT CRITERIA

The selection of the most appropriate investigation levels for use with a site specific environmental setting and land use scenario should consider factors including the protection of human health and ecosystems.

Investigation and screening levels are provided in *Guideline on Investigation Levels for Soil and Groundwater* (Schedule B1, NEPC, 2013) for commonly encountered contaminants which are applicable to generic land use scenarios and include consideration of, where possible, the soil type and the depth of contamination. Investigation levels and screening levels are the concentrations of a contaminant above which further appropriate investigation and evaluation will be required. Investigation and screening levels provide the basis of Tier 1 risk assessment.

6.1 INVESTIGATION AND SCREENING LEVELS

Health investigation levels (HILs) have been developed for a broad range of metals and organic substances. The HILs are applicable for assessing human health risk via all relevant pathways of exposure. The HILs are generic to all soil types and apply generally to a depth of 3 m below the surface for residential use.

Health screening levels (HSLs) have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via the inhalation and direct contact pathways. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types, and depths below surface to >4 m.

Ecological investigation levels (EILs) have been developed for selected metals and organic substances and are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2 m of soil.

Ecological screening levels (ESLs) have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon (TPH) fractions and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. They are generally applicable to the top 2 m of soil.

6.2 SOIL

6.2.1 Human Health Assessment

To address potential health impacts at the site, CES compared the analytical testing results against a set of health based soil investigation appropriate for the proposed land-use. That is, the HIL has been set at a level that provides confidence that contaminant concentrations below the HIL will not adversely affect human health. As described in Section 1.1, the future site land-use is proposed mixed use and aged care development; however, as CES is not in possession of development plans and as such cannot confirm the development to take place at the site, the NEPM (2013) HIL A

(residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), including childcare centres, preschools, and primary schools)) criteria has been adopted as a conservative approach for the assessment of human health. Additionally, NEPM (2013) HSL A & HSL B (low-high density residential for clay) criteria has been selected for the assessment of human health.

6.2.2 Ecological Assessment

NEPC (1999) indicates that while protection of human health often drives the first stages of assessment, protection of the environment (terrestrial and aquatic) should be a consideration for all site assessments. The closest waterbody, Georges River, is approximately 1.5 km east of the site and may be considered a sensitive ecological receptor.

To address the potential ecological impacts at the site, CES compared the analytical testing results against a set of ecological investigation and screening levels appropriate for the proposed land use of mixed use and aged care development. The NEPM (2013) EIL criteria adopted was generated using the CSIRO for *NEPM Ecological Investigation Level Calculation Spreadsheet* (CSIRO, 2010). Conservative values for pH (7.0 pH), cation exchange capacity (CEC) (20 cmolc/kg), organic content (1%) and clay content (80%) were used in absence of available data. Additionally, the NEPM (2013) ESL (fine soil texture) was adopted for the ecological assessment.

6.2.3 Asbestos

Health screening levels for asbestos in soils, which are based on scenario-specific likely exposure levels, are adopted from the Western Australia, Department of Health (WA DoH) guidelines. Based on the proposed end use, mixed use and aged care development, the Residential B exposure setting has been selected. As such, the HSL for bonded asbestos containing materials (ACM) is 0.01% and 0.001% for asbestos fines and fibrous asbestos.

7 QAQC DATA EVALUATION

Field and laboratory QA/QC requirements compliant with National Environmental Protection Council (1999 updated 2013) requirements are outlined below. Laboratory certificates of analysis are attached as **Appendix H**.

7.1 DATA ACCEPTANCE CRITERIA

The QA/QC Data was assessed against the Data Acceptance Criteria (DAC) provided in **Table 5**.

7.2 FIELD QA/QC PROGRAMME

Soil samples were collected by Mr Miles Thompson of CES, an experienced Geotechnical Engineer, under established CES protocols. CES personnel have been trained in sample collection and handling techniques.

For the purpose of assessing the quality of data presented in this report, CES collected and analysed Quality Control (QC) samples, while the laboratory completed their own QC. Tabulated QC data is provided in Table 6. The current section of this report is focused on the presentation of results of these QC samples and discussion of deviations from the Data Acceptance Criteria (DAC) (**Table 5**).

7.2.1 Blind Samples

One blind replicate sample was collected from GW1 (QAQC1). The replicate sample was preserved, stored, transported, prepared and analysed in an identical manner to the primary sample. As a minimum, the results of analyses on the blind replicate sample pair are assessed by calculating the Relative Percentage Differences (RPDs) between the results. The RPD is calculated as the difference between the results divided by their mean value and expressed as a percentage. The RPD were all within the DAC listed in **Table 5**

In summary, it is considered that the blind replicates confirm that the primary laboratory (Envirolab) analyses of the soil samples are repeatable and accurate.

7.2.2 Split Samples

One split sample was collected from MW1 (QAQC2), otherwise known as ‘inter-laboratory duplicates’, which provide a check on the analytical proficiency of the laboratories. Split samples are taken from the same location as the blind replicate, thus becoming a triplicate sample.

The results of the split sample analysis confirms the reliability of the laboratory analysis from Envirolab, since the all the RPD were compliant with the DAC, with the exception of chromium and nickel. The concentrations are only marginally different (that is to say not different by an order of magnitude) to the average concentrations detected at Envirolab. As such, the concentrations are likely to be a result of heterogeneity within the soil, rather than errors in laboratory analysis, field procedures or significant bands of contaminants within the sample.

The results of the RPD analysis indicates the analytical proficiency of the laboratories.

7.2.3 Trip Blanks

A trip blank consisting of pre-washed bottle containing acid-washed quartz sand was supplied by the analytical laboratory. The role of trip blank is to detect potential contamination during sample transport. These samples reside in transport vessels during sampling activities and are not opened in the field. Trip blanks are analysed at the laboratory as regular samples or only for volatile organic compounds, as deemed appropriate.

For soil sampling programmes, the trip blank consists of laboratory-supplied sand blank containing acid-washed quartz sand.

For the trip blank (TB) all analytes assessed were below the laboratory PQL, and therefore confirm to the DAC.

7.2.4 Laboratory-Prepared Trip Spike

Laboratory-prepared trip or VOC spikes consisting of sand spiked with known concentrations of BTEX. These samples are to be submitted for BTEX analysis with results compared with the known additions. The purpose of these samples is to monitor VOC losses during transit.

For the trip spike (TS) all analyte recoveries were within the DAC.

7.3 LABORATORY QA/QC PROGRAMME

The reliability of test results from the analytical laboratories will be monitored according to the QA/QC procedures used by the NATA accredited laboratory. The QA/QC programme employed by Envirolab (the primary laboratory) will specify holding times, extraction dates, method descriptions, Chain of Custody (COC) requirements, analysis, EQLs and acceptance criteria for the results. Laboratory QA/QC requirements undertaken by ALS are based on NEPM requirements and are outlined below (NEPC, 1999).

7.3.1 Laboratory Duplicate Samples

Laboratory duplicates provide data on analytical precision for each batch of samples. Where required and in order to provide sufficient sample for analysis of laboratory duplicate, two batches of samples are collected at the first site listed on the Chain of Custody form. This is done in order to ensure that sufficient sample is collected.

All laboratory duplicate samples' RPDs conformed to the DAC.

7.3.2 Laboratory Control Samples

Laboratory control samples consist of a clean matrix (de-ionised water or clean sand) spiked with a known concentration of the analyte being measured. These samples monitor method recovery in clean samples and can also be used to evaluate matrix interference by comparison with matrix spikes. Laboratory control samples may be certified reference materials.

All laboratory control samples conformed with the laboratory assessment criteria and therefore the DAC.

7.3.3 Surrogates

A surrogate is added at the extraction stage in order to verify method effectiveness. The surrogate is then analysed with the batch of samples. Percent recovery is calculated.

All laboratory surrogate samples conformed with the laboratory assessment criteria and therefore the DAC.

7.3.4 Matrix Spike

A matrix spikes consist of samples spiked with a known concentration of the analyte being measured, in order to identify properties of the matrix that may hinder method effectiveness. Samples are spiked with concentrations equivalent to 5 to 10 times the EQL. Percent recovery is calculated.

All matrix spikes conformed with the laboratory assessment criteria and therefore to the DAC.

7.3.5 Method Blanks

Method blanks are carried through all stages of sample preparation and analysis. Analyte concentrations in blanks should be less than the stated EQL. Reagent blanks are run if the method blank exceeds the EQL. The purpose of method blanks is to detect laboratory contamination.

All method blanks conformed with the laboratory assessment criteria and therefore to the DAC.

7.4 QA/QC ASSESSMENT SUMMARY

CES has a high degree of confidence in the quality of the field data (that is to say that the soil samples were representative of the material sampled, the samples were collected by an experienced sampler and that the chain of custody documentation was accurate) and the laboratory data (that is to say that Envirolab and ALS are NATA accredited laboratories, and undertake strict internal QA/QC of the results issued, uses appropriate methodology and practical quantification limits (PQL) to analyse soil samples and has completed sample documentation).

In consideration of the QAQC assessment, it is the opinion of CES that the data collected is suitable for the assessment of the site.

8 INVESTIGATION RESULTS

8.1 FIELDWORK

Fieldwork was carried out on 3 and 4 November 2016 (before the site inspection completed on the 24 November 2016). An underground services search was carried out and each borehole location was cleared for underground services prior to commencement of fieldwork

Borehole drilling and sample collection was carried out using a continuous flight auger. Boreholes were advanced through fill to a maximum depth of 0.5m into natural soils. One soil sample was collected from each borehole from the fill material between depths of 0.1m bgl to 0.7m bgl.

Fill was encountered in eight boreholes to a maximum depth of 2.2 m bgl in borehole GW2. No fill was encountered in the remaining two boreholes.

A summary of borehole locations, termination depth, and sample depth is presented as Table 1. Borehole logs are presented as **Appendix G**.

Three boreholes were converted to groundwater monitoring wells on part of the geotechnical study; measurement of water levels indicated that groundwater flow is towards the east.

8.2 SOIL LABORATORY ANALYTICAL RESULTS

Soil analytical results are presented as Table 7. The laboratory Certificates of Analysis are presented in **Appendix H**.

8.2.1 TRH and BTEX

TRH and BTEX results for fill samples were all below laboratory PQLs and therefore below the Site Acceptance Criteria (SAC).

8.2.2 PAH

PAH results in fill samples were below laboratory PQL and therefore the SAC.

8.2.3 Heavy Metals

Heavy metal concentrations in natural soil samples are all below the SAC.

8.2.4 OCPs

OCP results in fill samples were below laboratory PQL and therefore the SAC.

8.2.5 OPPs

OPP results in fill samples were below laboratory PQL and therefore the SAC.

8.2.6 PCBs

PCB results in fill samples were below laboratory PQL and therefore the SAC.

8.2.7 Asbestos

No asbestos was detected in the fill samples analysed. In addition, no potential asbestos containing materials were observed within the site soils.

9 DISCUSSION

Based on information provided by the client, the proposed redevelopment consists of a potential mixed use and aged care development. It is understood that the proposed development will occupy 50% of the available floor space ratio (FSR) with a residential aged care facility that is to be integrated into a larger mixed development of suitable complimentary tenancies. It is understood that the project may also include two levels of basement car parking to an indeterminate depth. Based on this information, receptors of the site, including workers, residents, visitors etc., will likely have access to surface soils and may be at risk of ingestion or inhalation of soils.

9.1 SITE ASSESSMENT

As there were no analysed fill samples that exceeded the SAC, it is understood that there is no potential risk to human health or ecological health at the site for the proposed mixed use and aged care development land use. However, as only ten boreholes were tested, further sampling to characterise the site and to comply with the Sampling Design Guidelines (NSW EPA, 1995), would require an additional 13 borehole sampling points to satisfy the minimum sampling points for site characterisation based on detecting circular hotspots for a site area of up to 1.3 ha.

Asbestos was not detected in any of the samples collected or observed in site soils.

9.2 WASTE CLASSIFICATION

The preliminary investigation of the soil at the site indicates that the fill material can be classified as General Solid Waste. Further investigation in accordance with the NSW EPA Excavated Natural Material Order 2014 at the time of excavation can confirm whether the fill materials can be classified as Excavated Natural Materials (ENM). Underlying natural soils at the site may be classified as Virgin Excavated Natural Materials (VENM) due to the nature of the fill material overlying the soils. Further sampling and analysis will be required to classify and validate these soils at time of the proposed excavation and development.

10 SUMMARY AND RECOMMENDATION

The results of this Stage 1 – Preliminary Site Investigation indicate that the site and surrounding areas have a history of commercial land use. Potentially contaminating land use activities that have been identified to have occurred onsite include:

- Poultry farming and processing; and
- Application of uncontrolled fill on the site;

The environmental investigation undertaken at the site to characterise the soils and to determine a preliminary waste classification of the soils consisted of sampling fill material from 10 boreholes at the site. The drilling of the boreholes showed the fill materials to consist of clay with gravels and sand to a maximum depth of 2.2m bgl (GW2). The investigation of the soil has indicated no presence of contamination at concentrations exceeding the SAC.

Contaminant concentrations of the fill material also indicated a preliminary waste classification to be general solid waste. Fill materials may be potentially classified as ENM with further sampling in accordance with the NSW EPA (2014) The excavated natural material order 2014. Natural soil underlying the fill materials may be classified as VENM due to the low concentrations of analytes detected in the fill materials, however, additional sampling would be required to confirm this waste classification.

Investigation of groundwater was not included in the scope of works for this environmental investigation, however, it is unlikely that groundwater is impacted by onsite sources of contamination. If discoloured or odorous soils are discovered during excavation works, further investigation of the soils and groundwater should be undertaken by a qualified environmental scientist/engineer.

11 LIMITATIONS OF THIS REPORT

This report has been prepared for use by the client who commissioned the works in accordance with the project brief and based on information provided by the client. The advice contained in this report relates only to the current project and all results, conclusions and recommendations should be reviewed by a competent person with experience in geotechnical and environmental investigations before being used for any other purpose. CES accepts no liability for use or interpretation by any person or body other than the client. This report must not be reproduced except in full and must not be amended in any way without prior approval by the client and CES.

This report does not provide a complete assessment of the environmental status of the site and is limited to the scope defined therein. It is noted that areas of the site could not be investigated due to the presence of structures including the residential property and presence of ponds. Should information become available regarding conditions at the site including previously unknown sources of contamination, CES reserves the right to review the report in the context of the additional information.

12 REFERENCES

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Figures

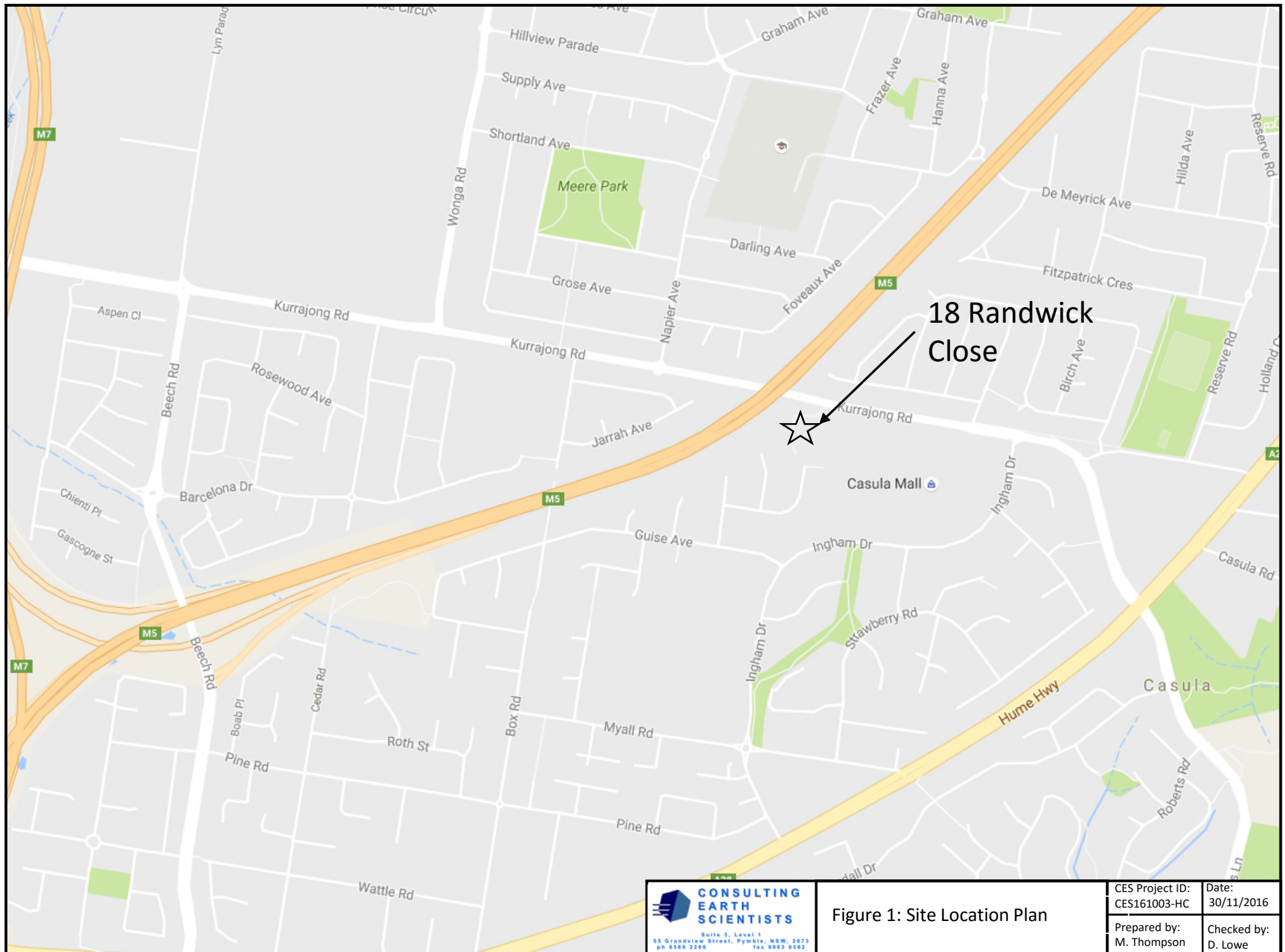





Figure 1: Site Location Plan

Legend

-  Groundwater Well
-  Borehole Location
-  Site Boundary



Note: The location of boreholes shown on this plan are approximate and have not been surveyed.



Aerial Source: NearMap dated 27 August 2016

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Title
Figure 2: Borehole Location Plan

CES Project ID: CES161003-HC	Date: 24/10/2016
Prepared By: M. Thompson	Checked By: D. Lowe

Tables

Table 1: Summary of Borehole Information

Sample Point	Date Drilled/Sampled	Easting	Northing	Ground Level (mAHD)	Termination Depth (m)	RL (mAHD)	Depth of analysed sample (m)
BH1	2-Nov	305666	6241713	39	8.7	30.3	0.5-0.7
BH2	3-Nov	305642	6241753	39	7.2	31.8	0.3-0.5
BH3	3-Nov	305498	6241570	40	6.7	33.3	0.3-0.5
BH4	4-Nov	305590	6241727	41	7	34	0.3-0.5
BH5	4-Nov	305573	6241714	42	9	33	0.4-0.6
BH6	2-Nov	305614	6241677	40	7.1	32.9	0.1-0.3
BH7	2-Nov	305631	6241722	40	7.8	32.2	0.5-0.7
GW1	2-Nov	305590	6241727	40	8.6	31.4	0.2-0.5
GW2	2-Nov	305661	6241682	39	8.5	30.5	0.4-0.6
GW3	3-Nov	305672	6241750	39	8.7	30.3	0.3-0.5

Table 2: Containers, preservation requirements, holding times and samples analysed - soil

Parameter	Container	Recommended Preservation	Maximum holding time	Number of samples analysed
Acid digestible metals and metalloids - Total and TCLP (As,Cd,Cu,Cr,Ni,Pb,Zn)	Glass with Teflon lid	Cool to <6°C	6 months	10
Mercury	Glass with Teflon lid	Cool to <6°C	28 days	10
Asbestos	Bag	Nil	Indefinite	10
TPH/BTEX	Glass with Teflon lid	4°C, zero headspace	14 days	10
PAHs (total and TCLP)	Glass with Teflon lid	4°C	14 days ¹	10
OCPs	Glass with Teflon lid	Cool to <6°C	14 days	10
OPP	Glass with Teflon lid	Cool to <6°C	14 days	10
PCBs	Glass with Teflon lid	Cool to <6°C, dark	28 days	10
Note 1: Extraction within 14 days. Analysis within 40 days.				

Table 3: Analytical parameters, PQLs and methods - Soil

Parameter	Unit	PQL	Method based on
Metals in Soil			
As ¹	mg kg ⁻¹	4	USEPA 200.7
Cd ¹	mg kg ⁻¹	0.4	USEPA 200.7
Cr ¹	mg kg ⁻¹	1	USEPA 200.7
Cu ¹	mg kg ⁻¹	1	USEPA 200.7
Hg ²	mg kg ⁻¹	0.1	USEPA 7471A
Ni ¹	mg kg ⁻¹	1	USEPA 200.7
Pb ¹	mg kg ⁻¹	1	USEPA 200.7
Zn ¹	mg kg ⁻¹	1	USEPA 200.7
Total Petroleum Hydrocarbons (TPH) in Soil			
C ₆ -C ₉ fraction	mg kg ⁻¹	25	USEPA 8015B
C ₁₀ -C ₁₄ fraction	mg kg ⁻¹	50	USEPA 8015B
C ₁₅ -C ₂₈ fraction	mg kg ⁻¹	100	USEPA 8015B
C ₂₉ -C ₃₆ fraction	mg kg ⁻¹	100	USEPA 8015B
BTEX in Soil			
Benzene	mg kg ⁻¹	0.2	USEPA 8021A
Toluene	mg kg ⁻¹	0.5	USEPA 8021A
Ethylbenzene	mg kg ⁻¹	1	USEPA 8021A
m&p-xylene	mg kg ⁻¹	2	USEPA 8021A
o-xylenes	mg kg ⁻¹	1	USEPA 8021A
Organic Contaminants in Soil			
PAHs	mg kg ⁻¹	0.1	USEPA 8270 SIM
Organochlorine Pesticides (OPC) in Soil			
OCPs	mg kg ⁻¹	0.1	USEPA 8081
Organophosphate Pesticides (OPP) in Soil			
OPPs	mg kg ⁻¹	0.1	USEPA 8270 or 8141
Polychlorinated Biphenyls (PCB) in Soil			
PCBs	mg kg ⁻¹	0.1	USEPA 8082
Asbestos in Soil			
Asbestos in Soil	g/kg	0.1	AS4964-2004
Note 1: Acid soluble metals by ICP-AES.			
Note 2: Total recoverable mercury.			

Table 4: Site Assessment Criteria - Soil

Contaminant	HIL (Setting A) ¹ (mg/kg)	HSL (Settings A & B) ² (mg/kg)	EIL (urban residential and public open space) ³ (mg/kg)	ESL (Urban Residential and public open space) ⁴ (mg/kg)
TRH C6 - C9				
TRH C6 - C10				
FRACTION 1		50		180
TRH C10 - C14				
TRH C15 - C28				
TRH C29 - C36				
TRH total C10 - C36				
TRH C10-C36				
TRH >C10-C16				
FRACTION 2		280		120
TRH >C16-C34				1300
TRH >C34-C40				5600
TRH total >C10-C40				
Benzene		0.7		65
Toluene		480		105
Ethylbenzene				125
m+p-xylene				
o-Xylene				
Xylenes		110		45
Naphthalene		5	170	
Acenaphthylene				
Acenaphthene				
Fluorene				
Phenanthrene				
Anthracene				
Fluoranthene				
Pyrene				
Benzo(a)anthracene				
Chrysene				
Benzo(b+k)fluoranthene				
Benzo(a)pyrene				0.7
Indeno(1,2,3-c,d)pyrene				
Dibenzo(a,h)anthracene				
Benzo(g,h,i)perylene				
Benzo(a)pyrene TEQ	3			
Total +ve	300			
HCB	10			
alpha-BHC				
gamma-BHC				
beta-BHC				
Heptachlor	6			
delta-BHC				
Aldrin				
Heptachlor Epoxide				
gamma-Chlordane				
alpha-chlordane				
Endosulfan I	270			
pp-DDE				
Dieldrin				
Endrin				
pp-DDD				
Endosulfan II				
pp-DDT			180	
Endrin Aldehyde				
Endosulfan Sulphate				
Methoxychlor	300			
Endosulfan (Endosulfan I + Endosulfan 2 + Endosulfan sulphate)				
Azinphos-methyl (Guthion)				
Bromophos-ethyl				
Chlorpyrifos				
Chlorpyrifos-methyl				
Diazinon				
Dichlorvos				
Dimethoate				
Ethion				
Fenitrothion				
Malathion				
Parathion				
Ronnel				
Aroclor 1016				
Aroclor 1221				
Aroclor 1232				
Aroclor 1242				
Aroclor 1248				
Aroclor 1254				
Aroclor 1260				
PCBs				
Arsenic	100		100	
Cadmium	20			
Chromium	100		810	
Copper	6000		240	
Lead	300		1100	
Mercury	40			
Nickel	400		270	
Zinc	7400		820	
Asbestos				

Note 1: NEPC (1999, as amended 2013) - Schedule B1 Guideline on Investigation Levels for Soil and Groundwater, HIL A (Residential with garden accessible soil)

Note 2: (NEPC< 1999, as amended 2013) - Schedule B1, Guideline on Investigation Levels For Soil and Groundwater, HSL A (Clay, 0m to <1m)

Note 3: (NEPC< 1999, as amended 2013) - Schedule B1, Guideline on Investigation Levels For Soil and Groundwater, EIL (urban residential and public open space)

Note 4: (NEPC< 1999, as amended 2013) - Schedule B1, Guideline on Investigation Levels For Soil and Groundwater, ESL (urban residential and public open space)

Table 4 (continued): Waste Classification Criteria - Soil

Contaminant	CT1 Values - General Solid Waste ¹ (mg/kg)	CT2 Values - Restricted Solid Waste ² (mg/kg)
TRH C6 - C9	650	2600
TRH C6 - C10		
FRACTION 1		
TRH C10 - C14		
TRH C15 - C28		
TRH C29 - C36		
TRH total C10 - C36		
TRH C10-C36		
TRH >C10-C16		
FRACTION 2		
TRH >C16-C34		
TRH >C34-C40		
TRH total >C10-C40	10000	40000
Benzene	10	40
Toluene	288	1152
Ethylbenzene	600	2400
m+p-xylene		
o-Xylene		
Xylenes	1000	4000
Naphthalene		
Acenaphthylene		
Acenaphthene		
Fluorene		
Phenanthrene		
Anthracene		
Fluoranthene		
Pyrene		
Benzo(a)anthracene		
Chrysene		
Benzo(b+k)fluoranthene		
Benzo(a)pyrene	0.8	3.2
Indeno(1,2,3-c,d)pyrene		
Dibenzo(a,h)anthracene		
Benzo(g,h,i)perylene		
Benzo(a)pyrene TEQ		
Total +ve	200	800
HCB		
alpha-BHC		
gamma-BHC		
beta-BHC		
Heptachlor		
delta-BHC		
Aldrin		
Heptachlor Epoxide		
gamma-Chlordane		
alpha-chlordane		
Endosulfan I	60	240
pp-DDE		
Dieldrin		
Endrin		
pp-DDD		
Endosulfan II		
pp-DDT		
Endrin Aldehyde		
Endosulfan Sulphate		
Methoxychlor		
Endosulfan (Endosulfan I + Endosulfan 2 + Endosulfan sulphate)	60	240
Azinphos-methyl (Guthion)		
Bromophos-ethyl		
Chlorpyrifos	4	16
Chlorpyrifos-methyl		
Diazinon		
Dichlorvos		
Dimethoate		
Ethion		
Fenitrothion		
Malathion		
Parathion		
Ronnel		
Aroclor 1016		
Aroclor 1221		
Aroclor 1232		
Aroclor 1242		
Aroclor 1248		
Aroclor 1254		
Aroclor 1260		
PCBs	<50	<50
Arsenic	100	400
Cadmium	20	80
Chromium	100	400
Copper		
Lead	100	400
Mercury	4	16
Nickel	40	160
Zinc		
Asbestos		

Note 1: Maximum values of specific contaminant concentration (SCC) for classification without TCLP - CT1 (General Solid Waste) (NSW EPA, 2014)

Note 2: Maximum values of specific contaminant concentration (SCC) for classification without TCLP - CT2 (Restricted Solid Waste) (NSW EPA, 2014)

Table 5: QC Sample Data Acceptance Criteria

QC Sample Type	Method of Assessment	Acceptable Range
Field QC		
Blind Replicates and Split Samples	<p>The assessment of split replicate is undertaken by calculating the Relative Percent Difference (RPD) of the replicate concentration compared with the original sample concentration. The RPD is defined as:</p> $RPD = 100 \times \frac{ X_1 - X_2 }{\text{Average}}$ <p>Where: X_1 and X_2 are the concentration of the original and replicate samples.</p>	<p>The acceptable range depends upon the levels detected:</p> <ul style="list-style-type: none"> 0 – 100% RPD (When the average concentration is < 5 times the LOR/EQL) 0 – 75% RPD (When the average concentration is 5 to 10 times the LOR/EQL) 0 – 50% RPD (When the average concentration is > 10 times the LOR/EQL)
Blanks (Rinsate and Trip Blanks)	Each blank is analysed as per the original samples.	Analytical Result < LOR/EQL
Laboratory-prepared Trip Spike	The trip spike is analysed after returning from the field and the % recovery of the known spike is calculated.	70% - 130%
Laboratory QC		
Laboratory Duplicates	Assessment as per Blind Replicates and Split Samples.	<p>The acceptable range depends upon the levels detected:</p> <ul style="list-style-type: none"> 0 – 100% RPD (When the average concentration is < 4 times the LOR/EQL) 0 – 50% RPD (When the average concentration is 4 to 10 times the LOR/EQL) 0 – 30% RPD (When the average concentration is > 10 times the LOR/EQL)
Surrogates Matrix Spikes Laboratory Control Samples	<p>Assessment is undertaken by determining the percent recovery of the known spike or addition to the sample.</p> $\% \text{ Recovery} = 100 \times \frac{C - A}{B}$ <p>Where: A = Concentration of analyte determined in the original sample; B = Added Concentration; C = Calculated Concentration.</p>	<p>70% - 130% (General Analytes)</p> <p>50% - 130% (Phenols) 60% - 130% (OP Pesticides)</p> <p>If the result is outside the above ranges, the result must be < 3x Standard Deviation of the Historical Mean (calculated over past 12 months)</p>
Method Blanks	Each blank is analysed as per the original samples.	Analytical Result < LOR/EQL
Note: EQL = Laboratory Estimated Quantitation Limit (EQL) or the minimum detection limit for a particular analyte. LOR = Limit of Reporting or the minimum		

Table 6: QA/QC tabulated results

Soil Sample					GW1	QAQC1	QAQC2	Average	Blind RPD	Average	Split RPD
Sample Type					Original	Blind replicate	Split replicate				
Laboratory report					156683	156683	ES1625137				
Parameters	Unit	Primary PQL	Blind PQL	Split PQL					%		%
TRH C6 - C9	mg/kg	25	25	10	<25	<25	<10	N/A	N/A	N/A	N/A
TRH C6 - C10	mg/kg	25	25	10	<25	<25	<10	N/A	N/A	N/A	N/A
FRACTION 1	mg/kg	25	25	10	<25	<25	<10	N/A	N/A	N/A	N/A
TRH C10 - C14	mg/kg	50	50	50	<50	<50	<50	N/A	N/A	N/A	N/A
TRH C15 - C28	mg/kg	100	100	100	<100	<100	<100	N/A	N/A	N/A	N/A
TRH C29 - C36	mg/kg	100	100	100	<100	<100	<100	N/A	N/A	N/A	N/A
TRH >C10-C16	mg/kg	50	50	50	<50	<50	<50	N/A	N/A	N/A	N/A
FRACTION 2	mg/kg	50	50	50	<50	<50	<50	N/A	N/A	N/A	N/A
TRH >C16-C34	mg/kg	100	100	100	<100	<100	<100	N/A	N/A	N/A	N/A
TRH >C34-C40	mg/kg	100	100	100	<100	<100	<100	N/A	N/A	N/A	N/A
								N/A	N/A	N/A	N/A
Benzene	mg/kg	0.2	0.2	0.2	<0.2	<0.2	<0.2	N/A	N/A	N/A	N/A
Toluene	mg/kg	0.5	0.5	0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Ethylbenzene	mg/kg	1	1	0.5	<1	<1	<0.5	N/A	N/A	N/A	N/A
m+p-xylene	mg/kg	2	2	0.5	<2	<2	<0.5	N/A	N/A	N/A	N/A
o-Xylene	mg/kg	1	1	0.5	<1	<1	<0.5	N/A	N/A	N/A	N/A
								N/A	N/A	N/A	N/A
Naphthalene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Acenaphthylene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Acenaphthene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Fluorene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Phenanthrene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Anthracene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Fluoranthene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Pyrene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Benzo(a)anthracene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Chrysene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Benzo(b+k)fluoranthene	mg/kg	0.2	0.2	0.5	<0.2	<0.2	<0.5	N/A	N/A	N/A	N/A
Benzo(a)pyrene	mg/kg	0.05	0.05	0.5	<0.05	<0.05	<0.5	N/A	N/A	N/A	N/A
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Dibenzo(a,h)anthracene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Benzo(g,h,i)perylene	mg/kg	0.1	0.1	0.5	<0.1	<0.1	<0.5	N/A	N/A	N/A	N/A
Benzo(a)pyrene TEQ	mg/kg	0.5	0.5	0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A
Total +ve	mg/kg	-	-	0.5	NIL (+)VE	NIL (+)VE	<0.5	N/A	N/A	N/A	N/A
								N/A	N/A	N/A	N/A
HCB	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
alpha-BHC	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
gamma-BHC	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
beta-BHC	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Heptachlor	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
delta-BHC	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Aldrin	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Heptachlor Epoxide	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
gamma-Chlordane	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
alpha-chlordane	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Endosulfan I	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
pp-DDE	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Dieldrin	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Endrin	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
pp-DDD	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Endosulfan II	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
pp-DDT	mg/kg	0.1	0.1	0.2	<0.1	<0.1	<0.2	N/A	N/A	N/A	N/A
Endrin Aldehyde	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Endosulfan Sulphate	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Methoxychlor	mg/kg	0.1	0.1	0.2	<0.1	<0.1	<0.2	N/A	N/A	N/A	N/A
								N/A	N/A	N/A	N/A
Azinphos-methyl (Guthion)	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Bromophos-ethyl	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Chlorpyrifos	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Chlorpyrifos-methyl	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Diazinon	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Dichlorvos	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Dimethoate	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Ethion	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Fenitrothion	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Malathion	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
Parathion	mg/kg	0.1	0.1	0.2	<0.1	<0.1	<0.2	N/A	N/A	N/A	N/A
Rommel	mg/kg	0.1	0.1	0.05	<0.1	<0.1	<0.05	N/A	N/A	N/A	N/A
								N/A	N/A	N/A	N/A
Aroclor 1016	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
Aroclor 1221	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
Aroclor 1232	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
Aroclor 1242	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
Aroclor 1248	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
Aroclor 1254	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
Aroclor 1260	mg/kg	0.1	0.1	-	<0.1	<0.1	nt	N/A	N/A	N/A	N/A
								N/A	N/A	N/A	N/A
Arsenic	mg/kg	4	4	5	8	6	10	7	28.6%	9.0	22.2%
Cadmium	mg/kg	0.4	0.4	1	<0.4	<0.4	<1	N/A	N/A	N/A	N/A
Chromium	mg/kg	1	1	2	17	26	9	21.5	41.9%	13.0	61.5%
Copper	mg/kg	1	1	5	20	19	20	19.5	5.1%	20.0	0.0%
Lead	mg/kg	1	1	5	10	10	10	10	0.0%	10.0	0.0%
Mercury	mg/kg	0.1	0.1	0.1	<0.1	<0.1	<0.1	N/A	N/A	N/A	N/A
Nickel	mg/kg	1	1	2	11	17	2	14	42.9%	6.5	138.5%
Zinc	mg/kg	1	1	5	17	18	12	17.5	5.7%	14.5	34.5%

Table 6: QA/QC tabulated results (continued)

Soil Sample					TB	TB	TS	TS
Sample Type					Trip Blank	Trip Blank	Trip Spike	Trip Spike
Laboratory report					156683	156717	156883	156717
Parameters	Unit	Primary PQL	Blind PQL	Split PQL			%	%
TRH C6 - C9	mg/kg	25	25	10	<25	<25		
TRH C6 - C10	mg/kg	25	25	10	<25	<25		
FRACTION 1	mg/kg	25	25	10	<25			
TRH C10 - C14	mg/kg	50	50	50	<50			
TRH C15 - C28	mg/kg	100	100	100	<100			
TRH C29 - C36	mg/kg	100	100	100	<100			
TRH >C10-C16	mg/kg	50	50	50	<50			
FRACTION 2	mg/kg	50	50	50	<50			
TRH >C16-C34	mg/kg	100	100	100	<100			
TRH >C34-C40	mg/kg	100	100	100	<100			
Benzene	mg/kg	0.2	0.2	0.2	<0.2	<0.2	100%	95%
Toluene	mg/kg	0.5	0.5	0.5	<0.5	<0.5	85%	98%
Ethylbenzene	mg/kg	1	1	0.5	<1	<1	96%	108%
m+p-xylene	mg/kg	2	2	0.5	<2	<2	99%	108%
o-Xylene	mg/kg	1	1	0.5	<1	<1	86%	111%
Naphthalene	mg/kg	0.1	0.1	0.5				
Acenaphthylene	mg/kg	0.1	0.1	0.5				
Acenaphthene	mg/kg	0.1	0.1	0.5				
Fluorene	mg/kg	0.1	0.1	0.5				
Phenanthrene	mg/kg	0.1	0.1	0.5				
Anthracene	mg/kg	0.1	0.1	0.5				
Fluoranthene	mg/kg	0.1	0.1	0.5				
Pyrene	mg/kg	0.1	0.1	0.5				
Benzo(a)anthracene	mg/kg	0.1	0.1	0.5				
Chrysene	mg/kg	0.1	0.1	0.5				
Benzo(b+k)fluoranthene	mg/kg	0.2	0.2	0.5				
Benzo(a)pyrene	mg/kg	0.05	0.05	0.5				
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	0.1	0.5				
Dibenzo(a,h)anthracene	mg/kg	0.1	0.1	0.5				
Benzo(g,h,i)perylene	mg/kg	0.1	0.1	0.5				
Benzo(a)pyrene TEQ	mg/kg	0.5	0.5	0.5				
Total +ve	mg/kg	-	-	0.5				
HCB	mg/kg	0.1	0.1	0.05				
alpha-BHC	mg/kg	0.1	0.1	0.05				
gamma-BHC	mg/kg	0.1	0.1	0.05				
beta-BHC	mg/kg	0.1	0.1	0.05				
Heptachlor	mg/kg	0.1	0.1	0.05				
delta-BHC	mg/kg	0.1	0.1	0.05				
Aldrin	mg/kg	0.1	0.1	0.05				
Heptachlor Epoxide	mg/kg	0.1	0.1	0.05				
gamma-Chlordane	mg/kg	0.1	0.1	0.05				
alpha-chlordane	mg/kg	0.1	0.1	0.05				
Endosulfan I	mg/kg	0.1	0.1	0.05				
pp-DDE	mg/kg	0.1	0.1	0.05				
Dieldrin	mg/kg	0.1	0.1	0.05				
Endrin	mg/kg	0.1	0.1	0.05				
pp-DDD	mg/kg	0.1	0.1	0.05				
Endosulfan II	mg/kg	0.1	0.1	0.05				
pp-DDT	mg/kg	0.1	0.1	0.2				
Endrin Aldehyde	mg/kg	0.1	0.1	0.05				
Endosulfan Sulphate	mg/kg	0.1	0.1	0.05				
Methoxychlor	mg/kg	0.1	0.1	0.2				
Azinphos-methyl (Guthion)	mg/kg	0.1	0.1	0.05				
Bromophos-ethyl	mg/kg	0.1	0.1	0.05				
Chlorpyrifos	mg/kg	0.1	0.1	0.05				
Chlorpyrifos-methyl	mg/kg	0.1	0.1	0.05				
Diazinon	mg/kg	0.1	0.1	0.05				
Dichlorvos	mg/kg	0.1	0.1	0.05				
Dimethoate	mg/kg	0.1	0.1	0.05				
Ethion	mg/kg	0.1	0.1	0.05				
Fenitrothion	mg/kg	0.1	0.1	0.05				
Malathion	mg/kg	0.1	0.1	0.05				
Parathion	mg/kg	0.1	0.1	0.2				
Ronnel	mg/kg	0.1	0.1	0.05				
Aroclor 1016	mg/kg	0.1	0.1	-				
Aroclor 1221	mg/kg	0.1	0.1	-				
Aroclor 1232	mg/kg	0.1	0.1	-				
Aroclor 1242	mg/kg	0.1	0.1	-				
Aroclor 1248	mg/kg	0.1	0.1	-				
Aroclor 1254	mg/kg	0.1	0.1	-				
Aroclor 1260	mg/kg	0.1	0.1	-				
Arsenic	mg/kg	4	4	5				
Cadmium	mg/kg	0.4	0.4	1				
Chromium	mg/kg	1	1	2				
Copper	mg/kg	1	1	5				
Lead	mg/kg	1	1	5				
Mercury	mg/kg	0.1	0.1	0.1				
Nickel	mg/kg	1	1	2				
Zinc	mg/kg	1	1	5				

Table 7 - Soil Analytical Results

Sample Location			BH1	BH2	BH3	BH4	BH5	BH6	BH7	GW1	GW2	GW2	GW3	NEPM (2013) HIL - Residential A	NEPM (2013) HSL - A & B: Low - high density residential - day; 0 - <1m	NEPM (2013) EIL (urban residential and public open space)	NEPM (2013) ESL (Urban Residential and public open space)	CT1 Values - General Solid Waste	CT2 Values - Restricted Solid Waste	max	min	mean	standard deviation	95%UCL			
Depth (m)			0.5-0.07	0.3-0.5	0.3-0.5	0.3-0.5	0.4-0.6	0.1-0.3	0.5-0.7	0.2-0.5	0.4-0.6	0.4-0.6	0.3-0.5														
Date Sampled			02-Nov-16	03-Nov-16	03-Nov-16	04-Nov-16	04-Nov-16	02-Nov-16	02-Nov-16	03-Nov-16	02-Nov-16	02-Nov-16	03-Nov-16														
Unit			Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill	Fill														
Laboratory report			156683	156683	156683	156717	156683	156683	156683	156683	156683	156683	156683	Parameters	Unit	PQL											
Sample Type			N	N	N	N	N	N	N	N	N	N	N														
TRH C6 - C9	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	50		180		650	2600	0	0	N/A	N/A	N/A			
TRH C6 - C10	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25							0	0	N/A	N/A	N/A			
FRACTION 1	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25							0	0	N/A	N/A	N/A			
TRH C10 - C14	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50							0	0	N/A	N/A	N/A			
TRH C15 - C28	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100							0	0	N/A	N/A	N/A			
TRH C29 - C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100							0	0	N/A	N/A	N/A			
TRH C10-C36	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100							0	0	N/A	N/A	N/A			
TRH -C10-C16	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50							0	0	N/A	N/A	N/A			
FRACTION 2	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50							0	0	N/A	N/A	N/A			
TRH >C16-C34	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100							0	0	N/A	N/A	N/A			
TRH >C34-C40	mg/kg	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	0	0	N/A	N/A	N/A									
Benzene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	280				10	40	0	0	N/A	N/A	N/A			
Toluene	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5							65	10	40	0	0	N/A	N/A	N/A
Ethylbenzene	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1							105	288	1152	0	0	N/A	N/A	N/A
m-p-xylene	mg/kg	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2							125	600	2400	0	0	N/A	N/A	N/A
p-Xylene	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	110						0	0	N/A	N/A	N/A			
Xylenes	mg/kg	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2							45	1000	4000	0	0	N/A	N/A	N/A
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							5	170		0	0	N/A	N/A	N/A
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										0	0	N/A	N/A	N/A
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1				0.2	0.2	0.2	N/A	N/A	N/A					
Anthrancene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Benzo(b,k)fluoranthene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2				0	0	N/A	N/A	N/A						
Benzo(a)pyrene	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			0.7	0.8	3.2	0	0	N/A	N/A	N/A				
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Dibenzo(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Benzo(a)pyrene TEQ	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3			0	0	N/A	N/A	N/A						
Total >ve	mg/kg	-	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	0.19	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE	300			200	800	0.19	0.19	0.19	N/A	N/A	N/A			
HCB	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10					0	0	N/A	N/A	N/A				
alpha-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6						0	0	N/A	N/A	N/A			
gamma-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
beta-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
delta-BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Heptachlor Epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
gamma-Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
alpha-chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Endosulfan I	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							270			60	240	0	0	N/A
pp-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	180						0	0	N/A	N/A	N/A			
Dieldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Endrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
pp-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Endosulfan II	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
pp-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Endosulfan Sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							300			0	0	N/A	N/A	N/A
Azinphos-methyl (Guthion)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1										0	0	N/A	N/A	N/A
Bromophos-ethyl	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				0	0	N/A	N/A	N/A						
Chlorpyrifos	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	4						0	0	N/A	N/A	N/A			
Chlorpyrifos-methyl	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Diazinon	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Dichlorvos	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Dimethoate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Ethion	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Fenitrothion	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Malathion	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1							0	0	N/A	N/A	N/A			
Parathion	mg/kg	0.1																									

Notes:

Health investigation levels for Residential land use with garden accessible soil (home grown products <10% minimal opportunities for soil access (Schedule B1, NEPM)

Health screening levels for Low to high density residential land use for clay 0m - <1m (Schedule B1, NEPM)

Ecological Investigation Level for urban residential and public open space (CSIRO EIL Calculation Spreadsheet)

Ecological Screening Level for urban residential and public open space (Schedule B1, NEPM)


Maximum values of specific contaminant concentration (SCC) for classification without TCLP - CT1 (General Solid Waste) (NSW EPA, 2014)

Maximum values of specific contaminant concentration (SCC) for classification without TCLP - CT2 (Restricted Solid Waste) (NSW EPA, 2014)



Appendix A



Photographic Log



		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 1		
Description: Site entry point from Randwick Close looking towards the southwestern corner of the site. Gravel 'driveway' seen in the foreground. Photograph shows the slope of the site increasing to the west.			
Direction Photo Taken: West			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 2		
Description: South-eastern corner taken from the southern portion of the site. Gravel surface in the foreground, may have been parking area or driveway. Daruk Park in the background with Casula Mall further east.			
Direction Photo Taken: Southeast			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 3		
Description: Centre of the southern portion of the site looking South-southwest towards the sit entry via Randwick Close. The foreground of the photograph shows dry path of grass which may indicate the footprint of the demolished building (completed in 2014). The background shows residential properties of Randwick Close.			
Direction Photo Taken: South-southwest			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 4		
Description: Photograph taken from the centre of the site looking towards the northeast. The foreground of the photograph shows a gravel / road base surface.			
Direction Photo Taken: Northeast			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 5		
Description: One of two metal road plate covered pits on the eastern boundary of the site. In the background is Daruk park and Casula Mall.			
Direction Photo Taken: East			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 6		
Description: One of three brick constructed pits containing 150mm PVC conduit. Size of pit approximately 600mm x 600mm			
Direction Photo Taken: West			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 7		
Description: Looking east along the northern boundary of the site. To the left of the photo is Kurrajong Road. In the foreground is stockpiles of timber. In the background is Casula Mall.			
Direction Photo Taken: East			

		Photographic Log	
Client Name: Heymann-Cohen Pty Ltd		Site Location: 18 Randwick Close, Casula New South Wales	Project Number: CES161003-HC
Date: 24/11/16	Plate No: 8		
Description: Centre of the northern half of the site looking towards the north-western corner. Gravel access driveway previously used on the site is shown in the foreground.			
Direction Photo Taken: Northwest			

Appendix B

Lot Search

Lotsearch



Environmental Risk and Planning Report

18 Randwick Close, Casula, NSW 2170

Report Buffer: 1000m

Report Date: 17 Nov 2016 14:53:02

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

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Location Confidence

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

LC Code	Location Confidence
1	Georeferenced to the site location / premise or part of site
2	Georeferenced with the confidence of the general/approximate area
3	Georeferenced to the road or rail
4	Georeferenced to the road intersection
5	Feature is a buffered point
6	Land adjacent to Georeferenced Site
7	Georeferenced 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 within Buffer
Cadastre Boundaries	Land and Property Information	17/11/2016	17/11/2016	Daily	-	-	-
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	01/11/2016	30/08/2016	Monthly	0	0	1
Contaminated Land: Records of Notice	Environment Protection Authority	11/11/2016	11/11/2016	Monthly	0	0	0
Former Gasworks	Environment Protection Authority	01/11/2016	10/05/2013	Monthly	0	0	0
National Waste Management Site Database	Geoscience Australia	01/11/2016	15/11/2012	Quarterly	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	03/11/2016	18/10/2016	Monthly	0	0	0
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	03/11/2016	18/10/2016	Monthly	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	03/11/2016	18/10/2016	Monthly	0	2	7
UPSS Environmentally Sensitive Zones	Department of Environment, Climate Change and Water (NSW)	14/04/2015	12/01/2010	As required	0	0	1
UBD Business to Business Directory 1991	Hardie Grant			Not required	0	1	1
UBD Business Directory 1991 Motor Garages/Service Stations	Hardie Grant			Not required	0	0	2
UBD Business Directory 1970	Hardie Grant			Not required	0	3	3
UBD Business Directory 1970 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	0	6
UBD Business Directory 1950	Hardie Grant			Not required	0	3	3
UBD Business Directory 1950 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	0	1
Points of Interest	Land and Property Information	10/04/2015	01/04/2015	Annually	0	2	29
Tanks (Areas)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Tanks (Points)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Major Easements	Land and Property Information	11/06/2014	11/06/2014	As required	0	0	6
State Forest	Land and Property Information	11/04/2016	23/01/2015	As required	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment and Heritage	11/04/2016	31/12/2015	Annually	0	0	1
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	21/03/2016	01/12/2015	Annually	0	0	9
Geological Units 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	1	-	4
Geological Structures 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	0	-	1
Naturally Occurring Asbestos Potential	NSW Department of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	0	0	0
Soil Landscapes	NSW Office of Environment and Heritage	12/08/2014		None planned	1	-	3
Standard Local Environmental Plan Acid Sulfate Soils	NSW Planning and Environment	07/10/2016	07/10/2016	As required	0	-	-
Dryland Salinity Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	0	0	0
Mining Subsidence Districts	Land and Property Information	17/11/2016	17/11/2016	As required	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	17/12/2015	24/10/2008	Annually	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features within Buffer
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	17/12/2015	05/02/1988	Annually	0	0	0
SEPP 71 - Coastal Protection	NSW Planning and Environment	17/12/2015	01/08/2003	Annually	0	0	0
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	0	0	0
SEPP Strategic Land Use Areas	NSW Planning and Environment	06/07/2016	28/01/2014	Annually	0	0	0
Local Environmental Plan - Land Zoning	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	1	7	50
Local Environmental Plan - Minimum Subdivision Lot Size	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	1	-	-
Local Environmental Plan - Height of Building	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	1	-	-
Local Environmental Plan - Floor Space Ratio	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	2	-	-
Local Environmental Plan - Land Application	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	1	-	-
Local Environmental Plan - Land Reservation Acquisition	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	0	-	-
State Heritage Items	NSW Planning and Environment	07/11/2016	30/10/2015	Quarterly	0	0	0
Local Heritage Items	NSW Planning and Environment	07/11/2016	04/09/2016	Quarterly	0	0	0
Bushfire Prone Land	NSW Rural Fire Service	11/11/2016	12/08/2016	Quarterly	0	0	3
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment and Heritage	08/10/2014	11/10/2013	As required	2	4	5
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	17/11/2016	17/11/2016	Daily	-	-	-

Aerial Imagery 2016

18 Randwick Close, Casula, NSW 2170



Legend

- Site Boundary
- Buffer 150m

Scale:
0 25 50 100
Meters

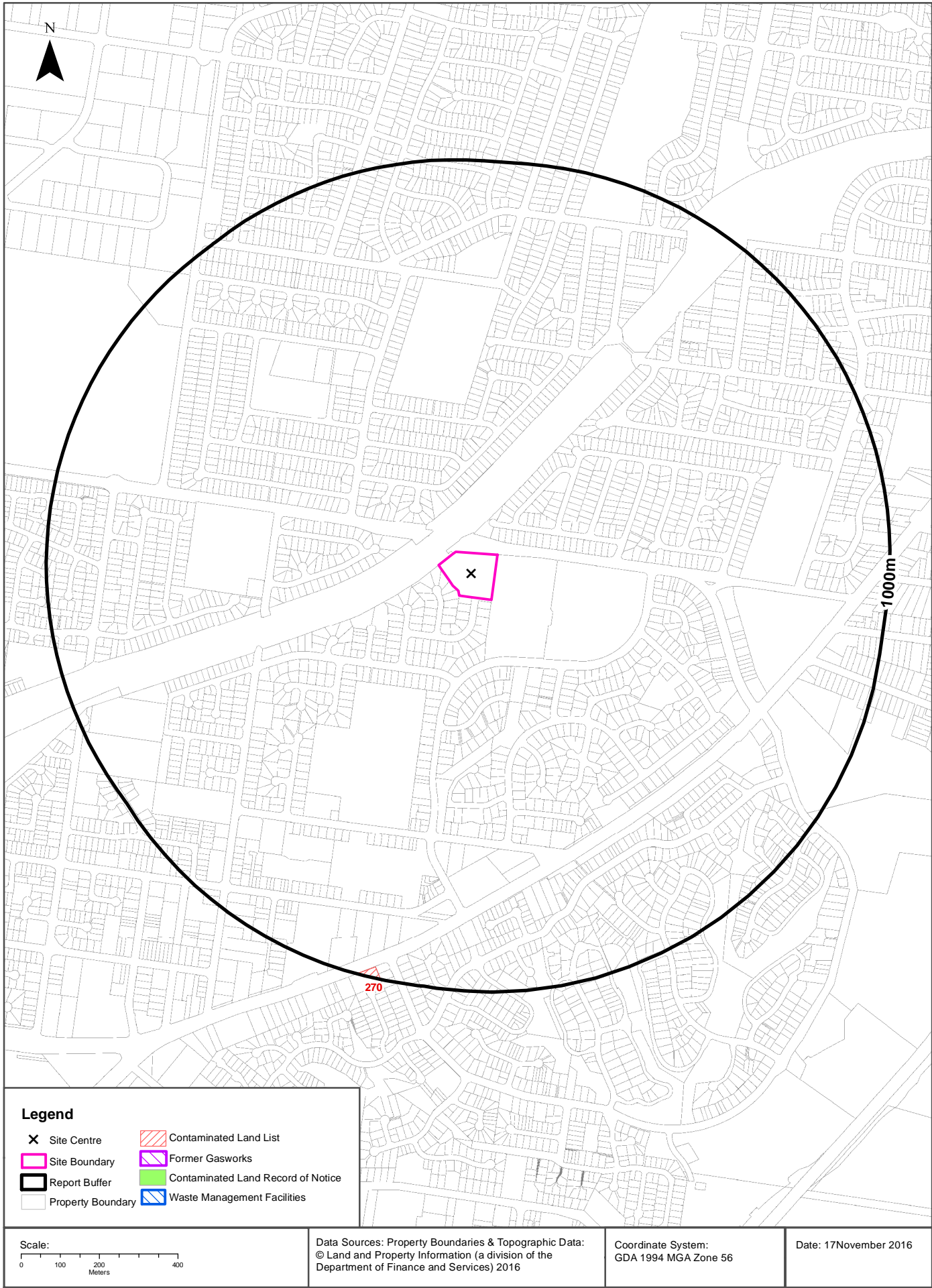
Data Sources: Aerial Imagery © 2016 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 November, 2016

Contaminated Land & Waste Management Facilities

18 Randwick Close, Casula, NSW 2170



Contaminated Land & Waste Management Facilities

18 Randwick Close, Casula, NSW 2170

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
270	Caltex Service Station	646 Hume Highway	Casula	Service Station	Regulation under CLM Act not required	Current EPA List	971m	South	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
© State of New South Wales through the Environment Protection Authority

Contaminated Land & Waste Management Facilities

18 Randwick Close, Casula, NSW 2170

Contaminated Land: Records of Notice

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
© State of New South Wales through the 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
© State of New South Wales through the Environment Protection Authority

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										

Waste Management Facilities Data Source: Australian Government Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

EPA Activities

18 Randwick Close, Casula, NSW 2170

Licensed Activities under the POEO Act 1997

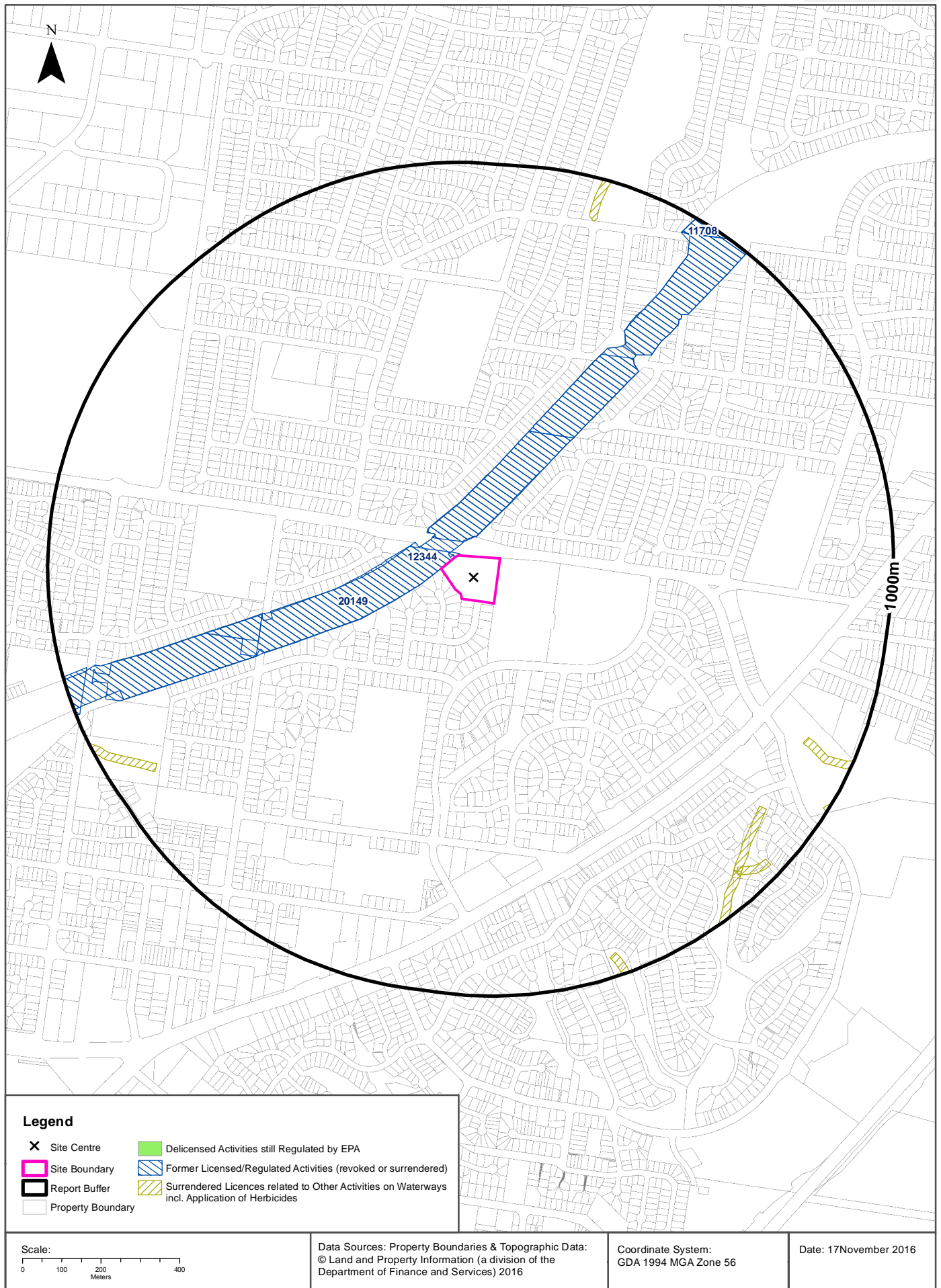
Licensed activities under the Protection of the Environment Operations Act 1997, within the report buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

POEO Licence Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Delicensed & Former Licensed EPA Activities

18 Randwick Close, Casula, NSW 2170



EPA Activities

18 Randwick Close, Casula, NSW 2170

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
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

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

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

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
12344	INTERLINK ROADS PTY LTD	M5 (between Georges River and Camden Valley Way), MOOREBANK, NSW 2170	Surrendered	04/08/2005	Road construction	3	0m	North
20149	LEND LEASE ENGINEERING PTY LIMITED	M5 West Widening - Kings Georges Rd to Camden Valley Way, PO Box 5700, WEST CHATSWOOD	Surrendered	07/08/2012	Road construction	3	0m	West
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	849m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	849m	-
5176	LIVERPOOL CITY COUNCIL	WATERWAYS OF LIVERPOOL CITY	Surrendered	17/04/2001	Other Activities / Non Scheduled Activity - Application of Herbicides	7	849m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	849m	-
11708	INTERLINK ROADS PTY LTD	M5 MOTORWAY, HAMMONDVILLE, NSW 2170	Surrendered	18/09/2002	Extractive Industries	3	948m	North East

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

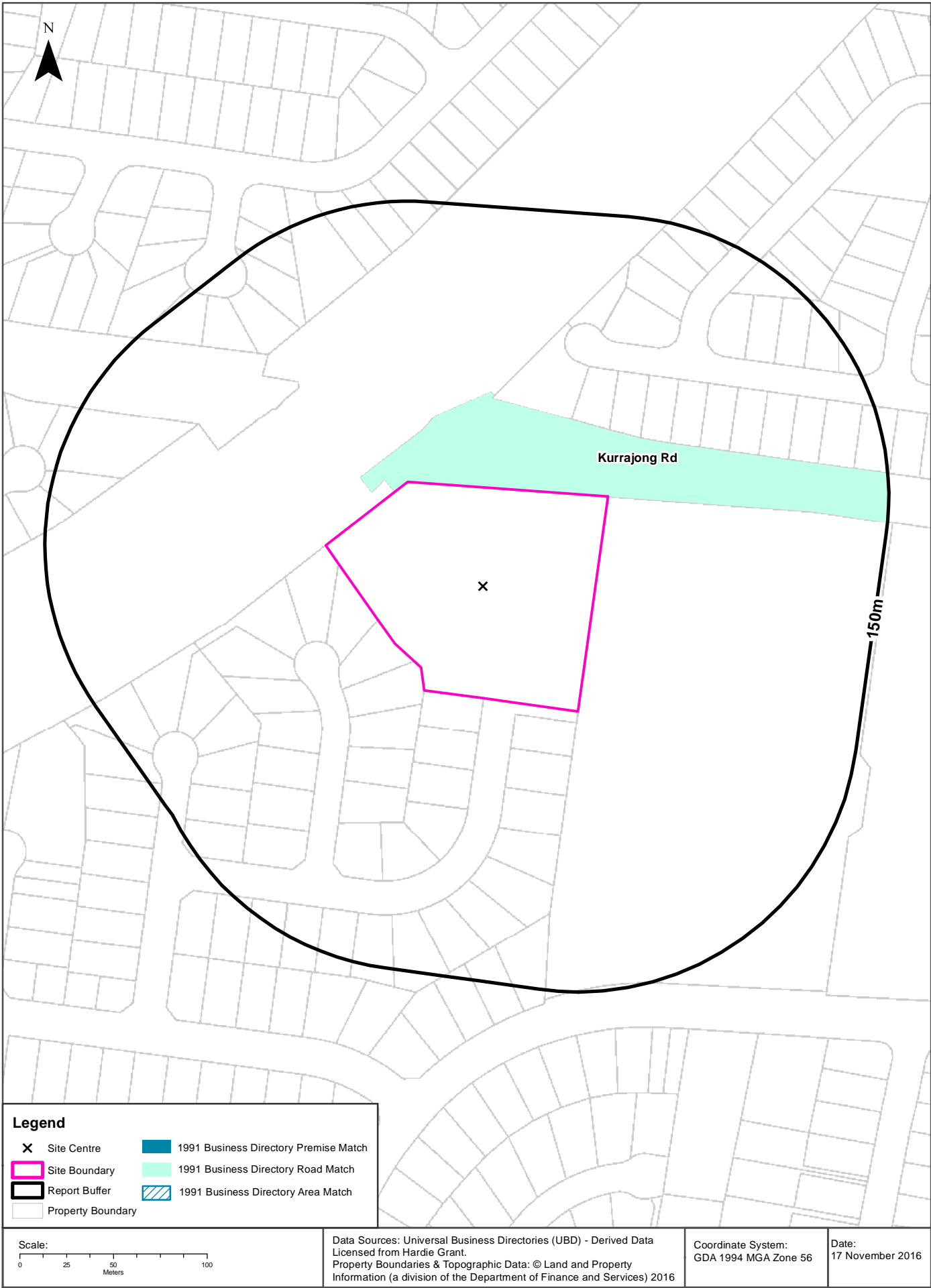
UPSS Sensitive Zones

18 Randwick Close, Casula, NSW 2170



1991 Historical Business Directory Records

18 Randwick Close, Casula, NSW 2170



Historical Business Directories

18 Randwick Close, Casula, NSW 2170

1991 Business to Business Directory Records

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

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Poultry Dealers Wholesale	Inghams Enterprises Pty Ltd	Kurrajong Rd Casula 2170	58486	Road Match	0m	East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1991 Business Directory Motor Garages & Service Stations

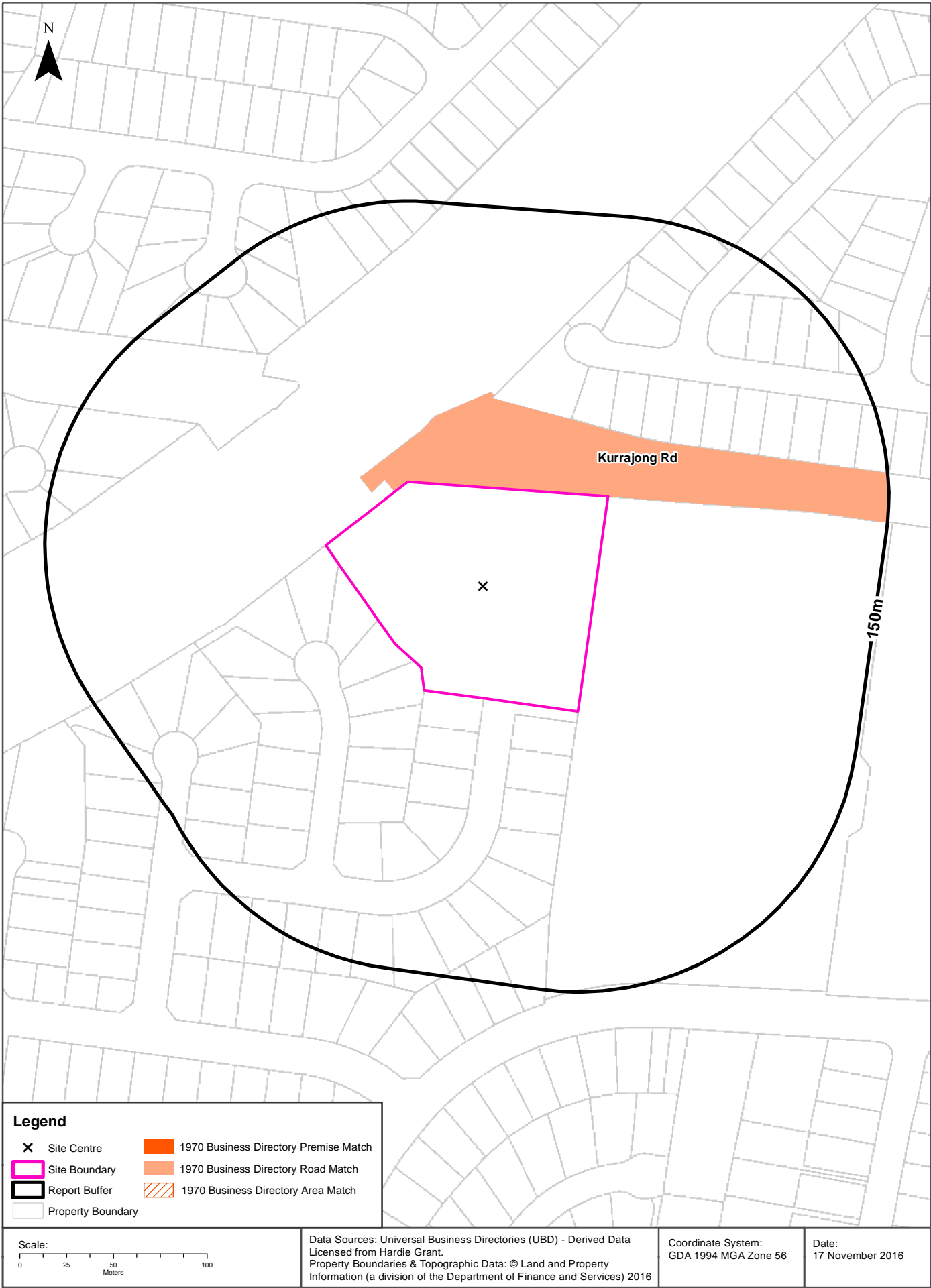
Motor Garages & Service Stations from the 1991 UBD Business Directory within 1km of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Motor Garages & Service Stations	BP Casula Service Station	Hume H'way., Casula. 2170	53575	Road Match	640m	South East
Motor Garages & Service Stations	Derli Transport Service Station	Hume Hway, Casula 2170	53684	Road Match	640m	South East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Historical Business Directory Records

18 Randwick Close, Casula, NSW 2170



Historical Business Directories

18 Randwick Close, Casula, NSW 2170

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
HATCHERIES (H310)	Ingham,W. H.,Kurrajong Rd.,Casula	315605	Road Match	0m	East
POULTRY DEALERS-RETAIL (P692)	Ingham,W. H.,Kurrajong Rd.,Casula	351248	Road Match	0m	East
POULTRY DEALERS-W'SALE (P696)	Ingham's Enterprises Pty. Ltd.,Kurrajong Rd.,Casula	351320	Road Match	0m	East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Business Directory Drycleaners & Service Stations

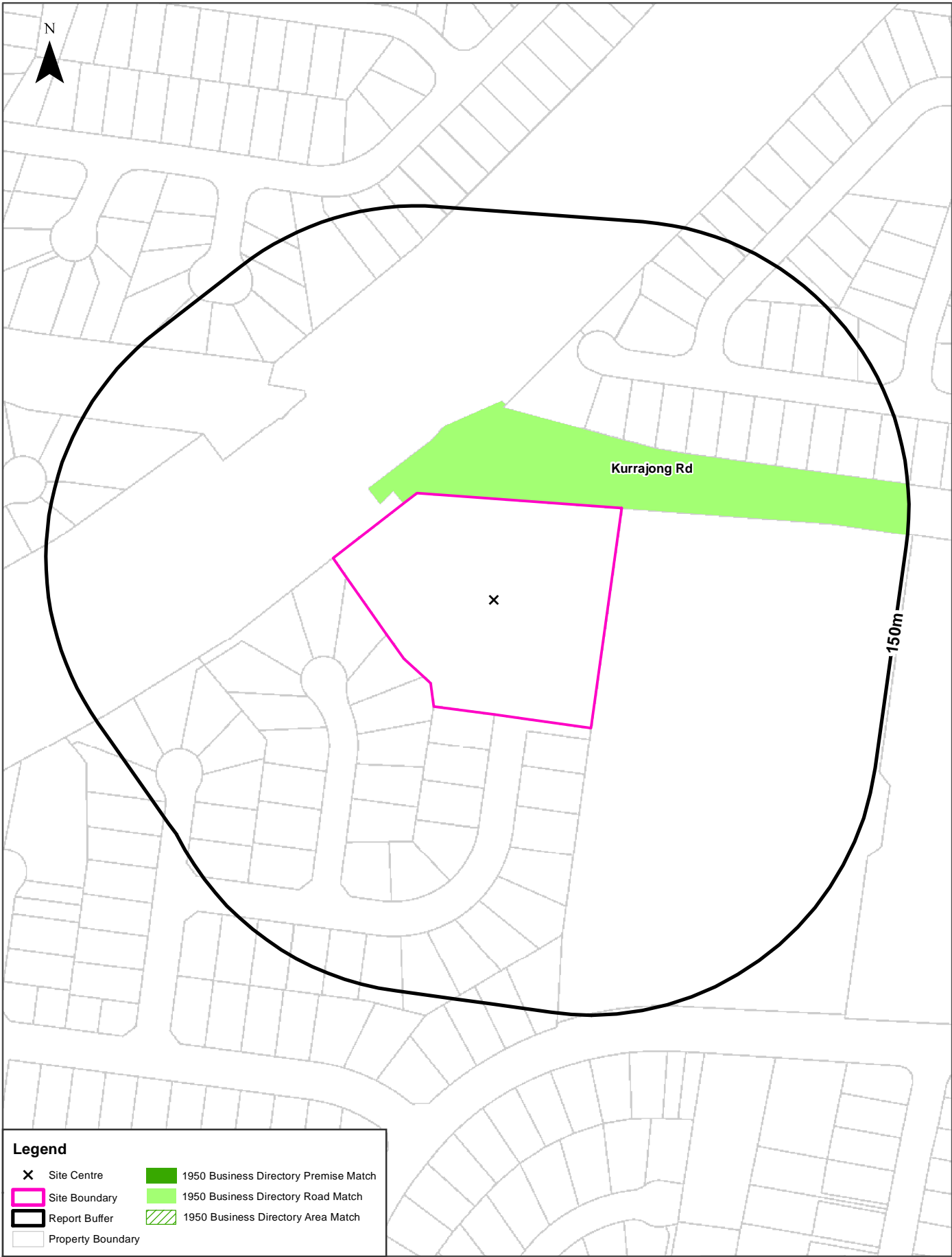
Drycleaners, Motor Garages & Service Stations from the 1970 UBD Business Directory within 1km of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	B.P. Casula,Hume Highway.,CasuaCASULA	340796	Road Match	640m	South East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Casula Auto Port,Hume Highway.CASULA	340955	Road Match	640m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	Derll Transport & Service Station,Hume Highway.CASULA	337673	Road Match	640m	South East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Gee's Cafe & Service Station (Ampol),Hume Highway.CASULA	341136	Road Match	640m	South East
MOTOR GARAGES & ENGINEERS (M6S6)	Green Hills Service Station,Hume Highway.CASULA	337935	Road Match	640m	South East
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Williams Service Station,Hume Highway.CASULA	341632	Road Match	640m	South East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Historical Business Directory Records

18 Randwick Close, Casula, NSW 2170



Scale: 0 25 50 100 Meters	Data Sources: Universal Business Directories (UBD) - Derived Data Licensed from Hardie Grant. Property Boundaries & Topographic Data: © Land and Property Information (a division of the Department of Finance and Services) 2016	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 November 2016
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Historical Business Directories

18 Randwick Close, Casula, NSW 2170

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
POULTRY FARMERS	Burton, T. P., Kurrajong Rd., Casula	93905	Road Match	0m	East
POULTRY FARMERS	Curtis, V., Kurrajong Rd., Casula	93963	Road Match	0m	East
POULTRY FARMERS	Ingham, W. H., Kurrajong Rd., Casula	94092	Road Match	0m	East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1950 UBD Business Directory within 1km of the site:

Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES &/OR ENGINEERS	Bare, R. H., Hume Hghwy., Casula	83421	Road Match	640m	South East

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Aerial Imagery 2014

18 Randwick Close, Casula, NSW 2170



Legend

- Site Boundary
- Buffer 150m

Scale:
0 25 50 100
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: 17 November 2016

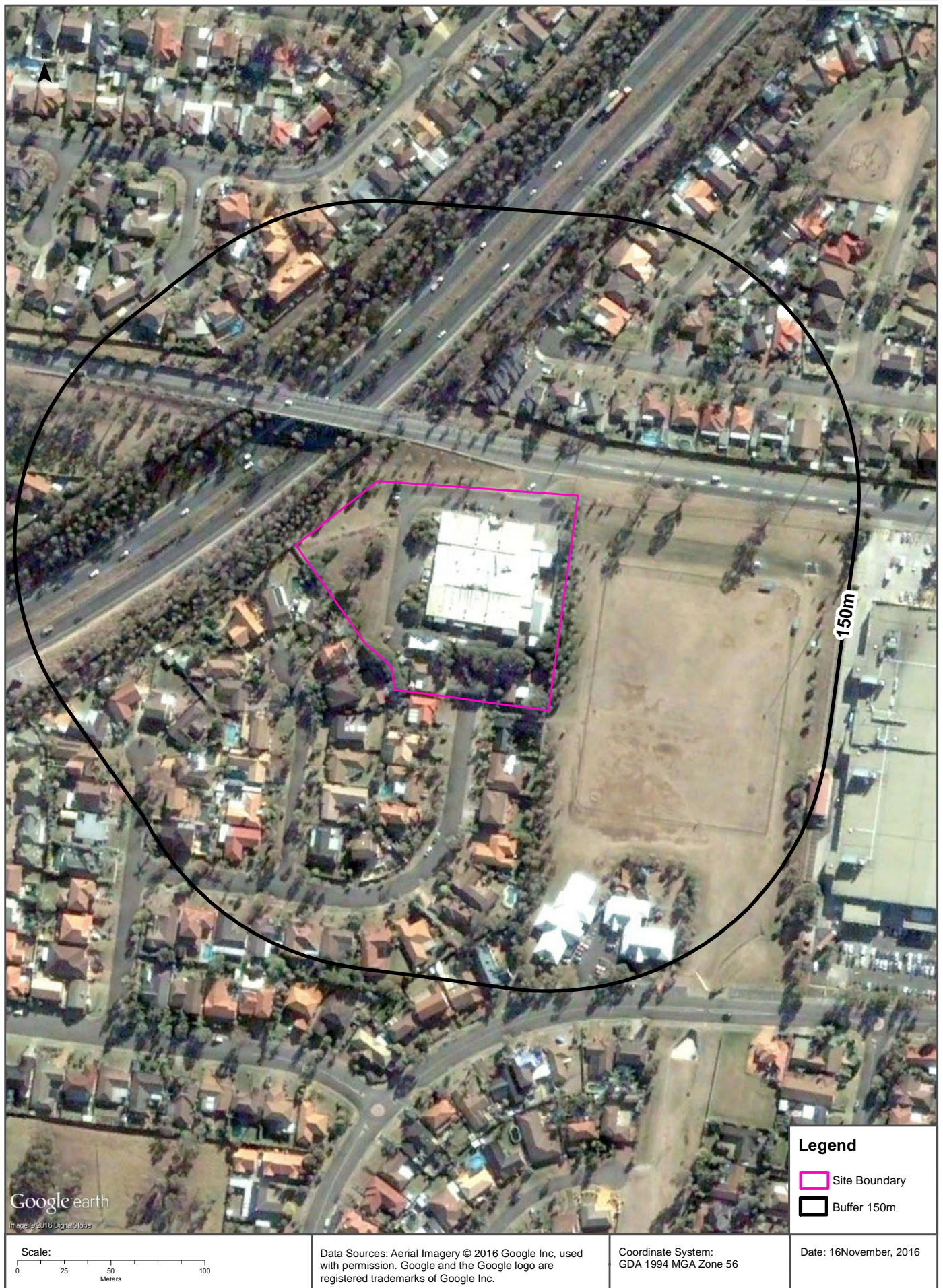
Aerial Imagery 2009

18 Randwick Close, Casula, NSW 2170

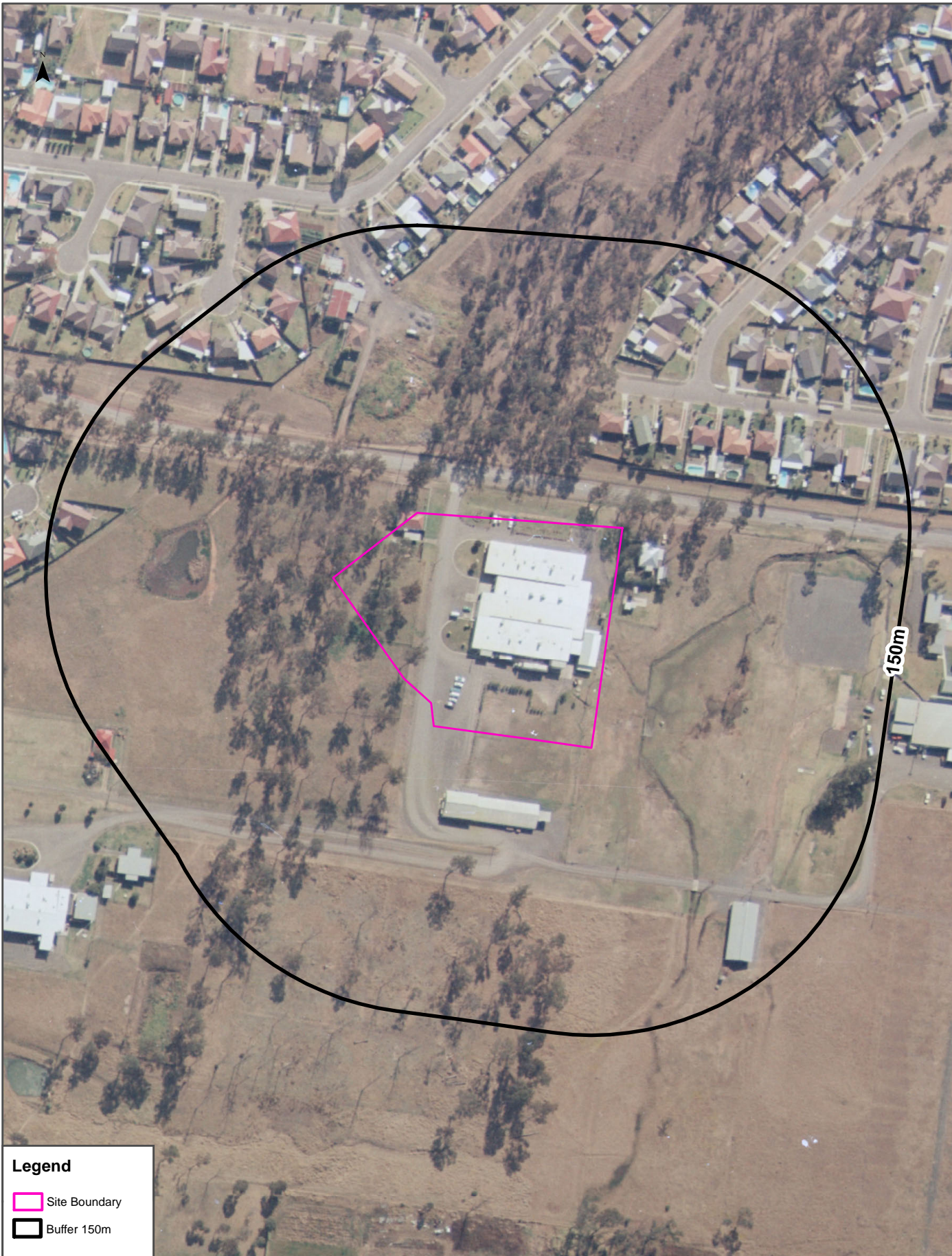


Aerial Imagery 2004

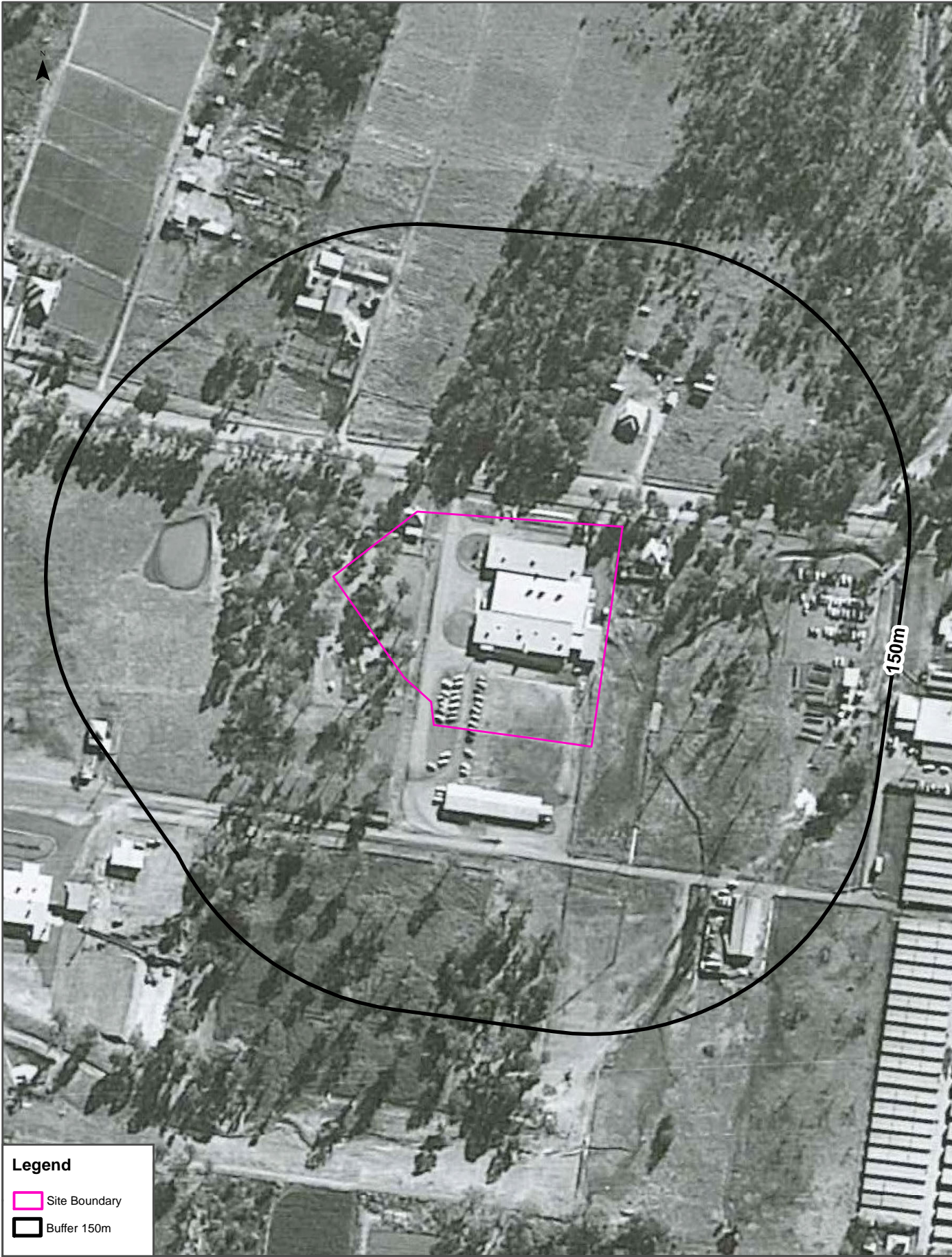
18 Randwick Close, Casula, NSW 2170







Scale: 0 25 50 100 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: 16 November 2016
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Scale: 0 25 50 100 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: 16November 2016
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Scale: 0 25 50 100 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: 16November 2016
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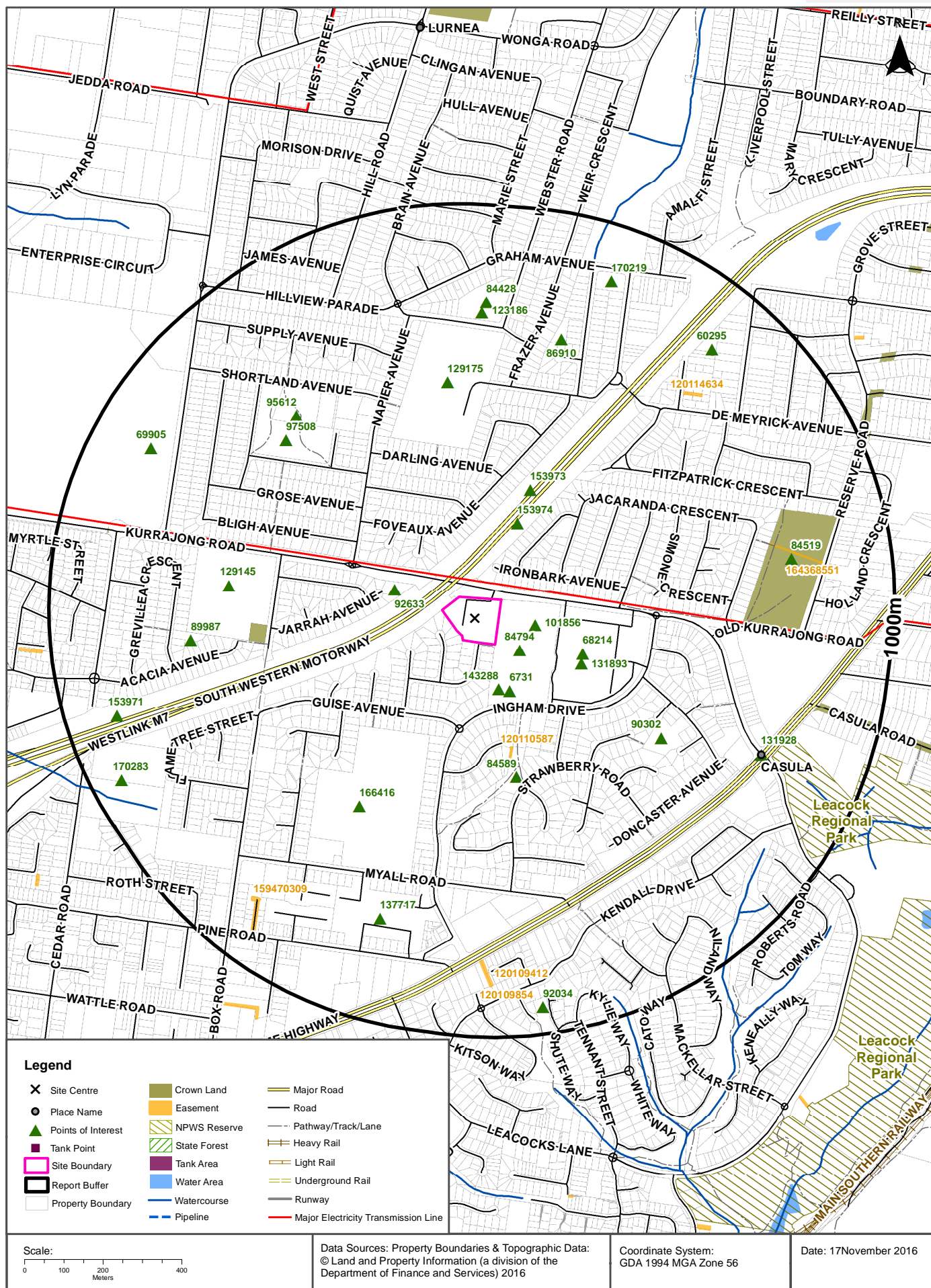
Scale: 0 25 50 100 Meters	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 16 November 2016
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<p>Scale:</p> <p>0 25 50 100</p> <p>Meters</p>	<p>Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 16November 2016</p>
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Topographic Features

18 Randwick Close, Casula, NSW 2170



Topographic Features

18 Randwick Close, Casula, NSW 2170

Points of Interest

What Points of Interest exist within the report buffer?

Map Id	Feature Type	Label	Distance	Direction
84794	Park	DARUK PARK	64m	South East
101856	Sports Field	BASEBALL FIELDS	94m	East
143288	Library	CASULA LIBRARY	113m	South
6731	Community Facility	CASULA COMMUNITY CENTRE	123m	South East
92633	Park	JARRAH AVENUE RESERVE	131m	West
153974	Roadside Emergency Telephone	93	199m	North East
68214	Shopping Centre	CASULA MALL	224m	East
131893	Post Office	CASULA MALL POST OFFICE	225m	South East
153973	Roadside Emergency Telephone	94	289m	North East
84589	Park	GANDANGARA PARK	341m	South
90302	Park	THARAWAL PARK	484m	South East
166416	High School	CASULA HIGH SCHOOL	497m	South West
129145	Primary School	PRESTONS PUBLIC SCHOOL	545m	West
129175	High School	LURNEA HIGH SCHOOL	547m	North
97508	Sports Court	TENNIS COURTS	587m	North West
95612	Park	MEERE PARK	617m	North West
89987	Park	ACACIA PARK	644m	West
86910	Park	BAKER PARK	680m	North
123186	Community Facility	FRANK CALABRO COMMUNITY CENTRE	725m	North
131928	Suburb	CASULA	732m	South East
137717	Retirement Village	AVEO MAPLE GROVE	739m	South
84519	Park	JARDINE PARK	745m	East
84428	Park	MUNRO PARK	752m	North
60295	Place Of Worship	JEHOVAHS WITNESSES CHURCH	832m	North East
69905	Transmission Station	NTL TRANSMITTING STATION	847m	North West
170219	Place Of Worship	LIVERPOOL SOUTH ANGLICAN CHURCH	858m	North
153971	Roadside Emergency Telephone	96	869m	West
170283	Park	PETER MILLER RESERVE	923m	South West
92034	Park	TALL GUMS PARK	930m	South

Topographic Data Source: © Land and Property Information (2015)

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Topographic Features

18 Randwick Close, Casula, NSW 2170

Tanks (Areas)

What are the Tank Areas located within the report buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks (Points)

What are the Tank Points located within the report buffer?

Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

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

Tanks Data Source: © Land and Property Information (2015)

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Major Easements

What Major Easements exist within the report buffer?

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

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120110587	Primary	Undefined		263m	South
164368551	Primary	Electricity	var	696m	East
120114634	Primary	Undefined		700m	North East
120109412	Primary	Undefined		803m	South
120109854	Primary	Undefined		806m	South
159470309	Primary	Right of way	7.955m and Var	835m	South West

Easements Data Source: © Land and Property Information (2015)

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Topographic Features

18 Randwick Close, Casula, NSW 2170

State Forest

What State Forest exist within the report buffer?

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

State Forest Data Source: © Land and Property Information (2015)

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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the report buffer?

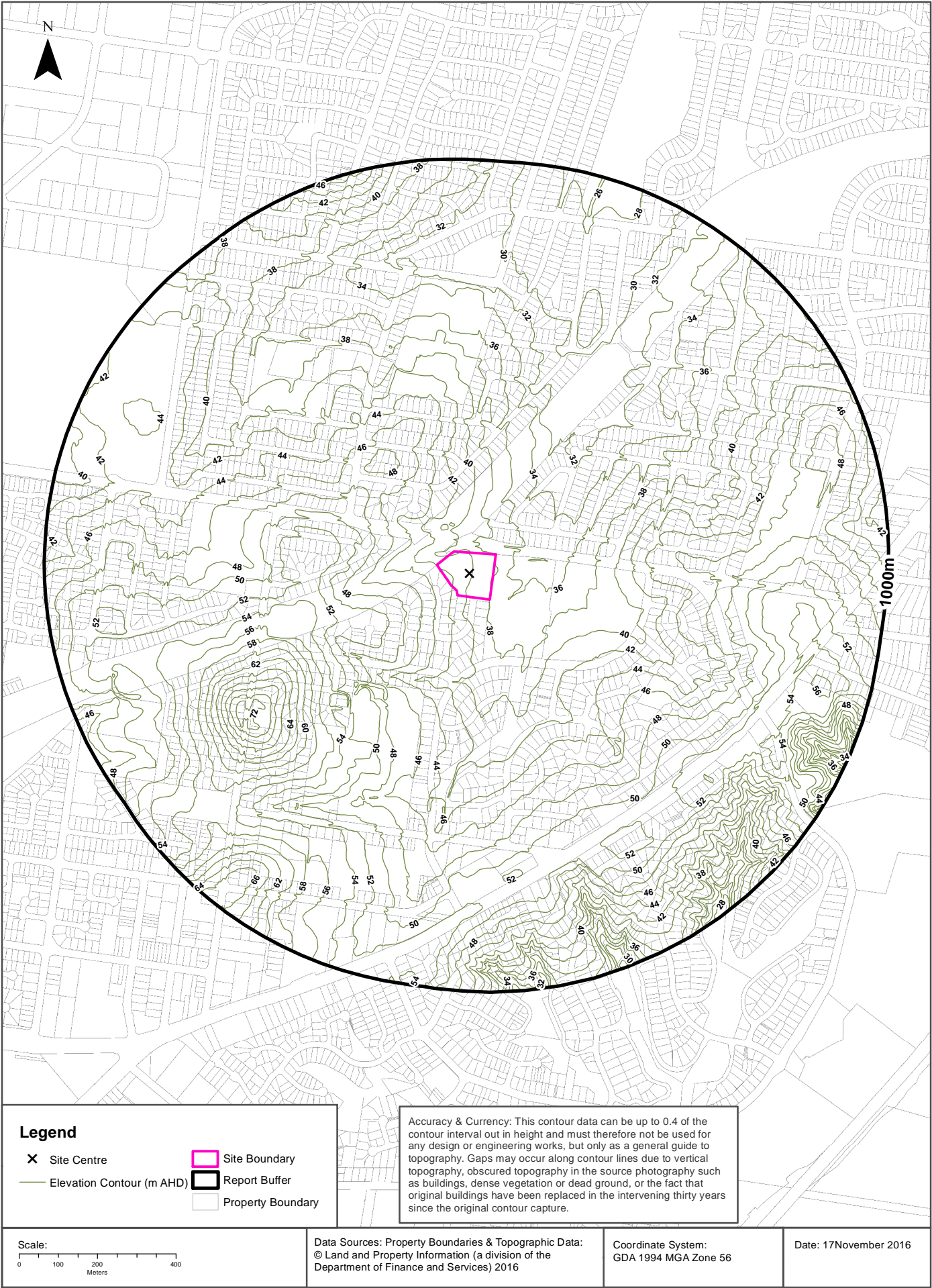
Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N0633	REGIONAL PARK	Leacock Regional Park	05/09/1997	758m	South East

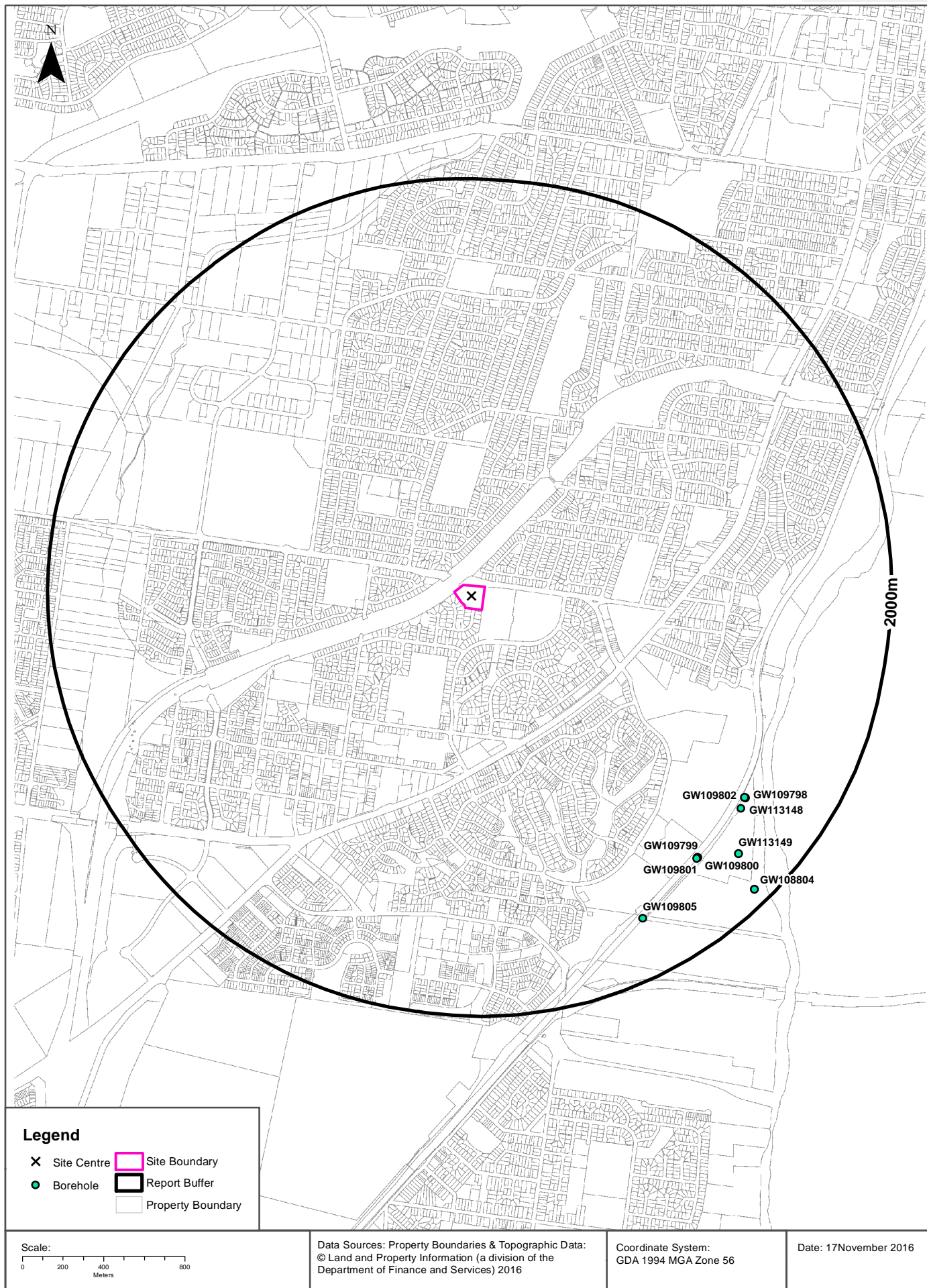
NPWS Data Source: © Land and Property Information (2015)

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Elevation Contours (m AHD)

18 Randwick Close, Casula, NSW 2170





Hydrogeology & Groundwater

18 Randwick Close, Casula, NSW 2170

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)

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Groundwater Boreholes

Boreholes within 2km of the site:

GW No.	Licence No	Work Type	Owner Type	Purpose	Contractor	Complete Date	Final Depth	Drilled Depth	Salinity	SWL	Yield	Elev	Dist	Dir
GW109802	10BL601720	Bore	Private	Monitoring	Macquarie Drilling	29/01/2007	10.00	10.00					1590m	South East
GW109798	10BL601720	Bore	Private	Monitoring	Macquarie Drilling	29/01/2007	29.80	29.80					1593m	South East
GW113148	10BL604291	Bore	Private	Monitoring	Macquarie Drilling	22/04/2010	5.50	5.50					1609m	South East
GW109799	10BL601720	Bore	Private	Monitoring	Macquarie Drilling	29/01/2007	22.80	22.80					1617m	South East
GW109801	10BL601720	Bore	Private	Monitoring	Macquarie Drilling	30/01/2007	14.00	14.00					1617m	South East
GW109800	10BL601720	Bore	Private	Monitoring	Macquarie Drilling	29/01/2007	11.00	11.00					1618m	South East
GW109805	10BL601722	Bore	Private	Monitoring	Macquarie Drilling	29/01/2007	12.00	12.00					1714m	South East
GW113149	10BL604291	Bore	Private	Monitoring	Macquarie Drilling	22/04/2010	6.00	6.00					1743m	South East
GW108804	10BL601719	Bore	Private	Monitoring		22/04/2008	11.00	11.00					1921m	South 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

18 Randwick Close, Casula, NSW 2170

Driller's Logs

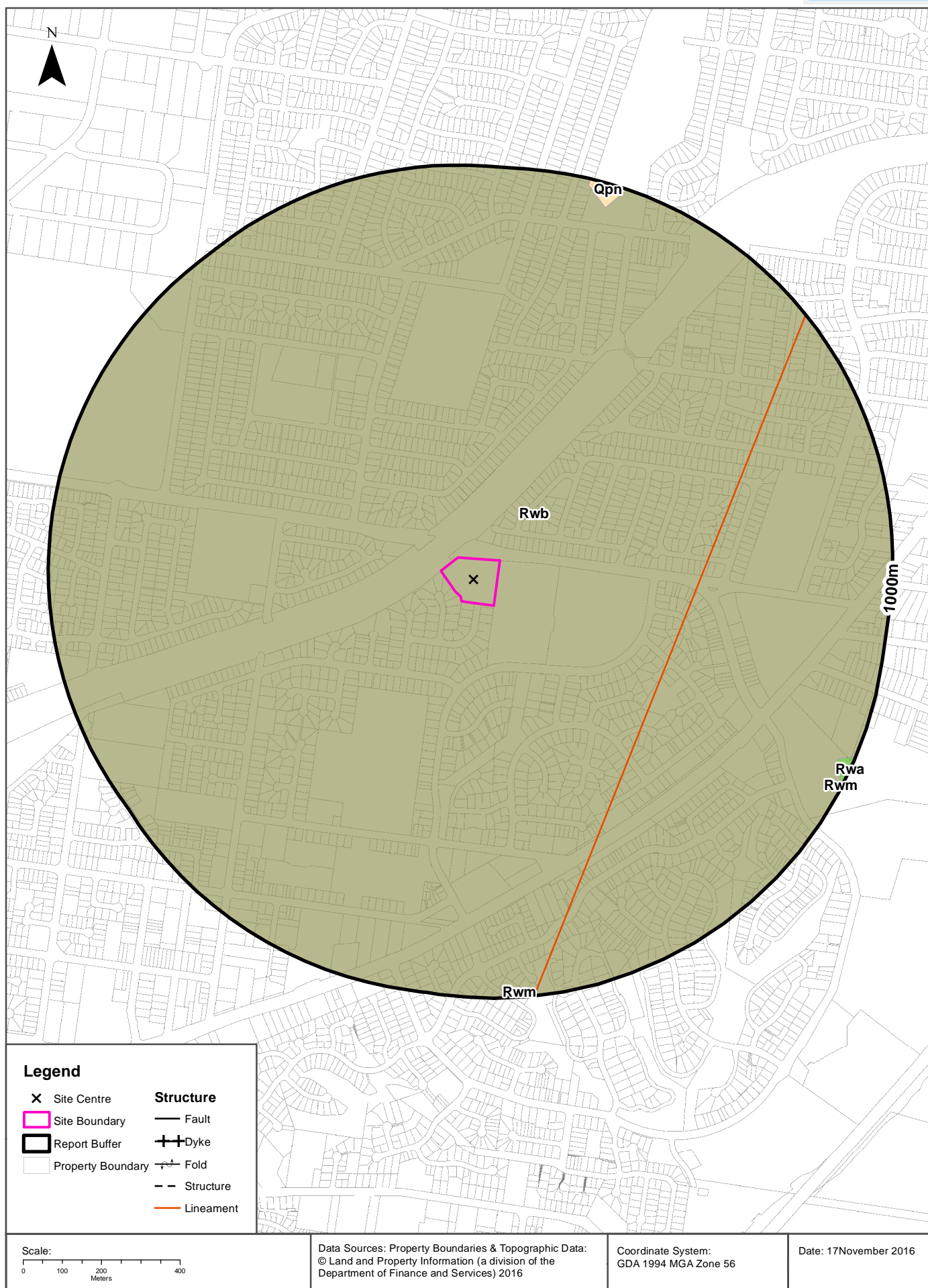
Drill log data relevant to the boreholes within 2km of the site:

Groundwater No	Drillers Log	Distance	Direction
GW109802	0.00m-3.50m SANDY CLAY,BROWN,FINE TO MEDIUM GRAINED,TRACE CLAY,DRY 3.50m-9.00m SANDY CLAY,LIGHT GREY,DRY TO MOIST 9.00m-10.00m SILTY SAND,WET,BROWN,DARK GREY	1590m	South East
GW109798	0.00m-3.50m SANDY CLAY, BROWN,FINE TO MEDIUM GRAINED 3.50m-9.00m SANDY CLAY,LIGHT GREY,DRY TO MOIST 9.00m-10.00m SILTY SAND,WET BROWN,DARK GREY,COURSE GRAINED 10.00m-20.50m SHALE,DARK GREY,MEDIUM STRENGTH,TRACE CLAY 20.50m-22.50m SHALE.LAMINATED SANDSTONE,DARK GREY 22.50m-29.80m SANDSTONE,LIGHT GREY,MEDIUM GRAINED	1593m	South East
GW109799	0.00m-3.00m SANDY CLAY LOAM,BROWN,FINE TO MEDIUM GRAIN,DRY 3.00m-7.50m SILTY SANDY CLAY,BROWN,MEDIUM GRAINED,DRY 7.50m-8.50m CLAYEY SAND,LIGHT GREY,MEDIUM GRAINED,DRY TO MOIST 8.50m-13.00m SHALE,DARK GREY,MEDIUM STRENGTH,WATER FROM 8m 13.00m-15.00m WEATHERED SHALE AND LAMINATED SANDSTONE,GREY 15.00m-22.80m SANDSTONE,LIGHT GREY,FINE TO MEDIUM GRAINED	1617m	South East
GW109801	0.00m-3.00m SANDY CLAY LOAM,BROWN,FINE TO MEDIUM GRAIN,DRY 3.00m-4.00m SILTY SANDY CLAY,BROWN,MEDIUM GRAINED,DRY 4.00m-7.50m SAND,GREY,FINE TO MEDIUM GRAINED 7.50m-8.50m CLAYEY SAND,LIGHT GREY,MEDIUM GRAINED,DRY TO MOIST 8.50m-10.00m WEATHERED SHALE,DARK GREY,HARDER WITH DEPTH 10.00m-14.00m SHALE,DARK GREY	1617m	South East
GW109800	0.00m-2.00m SILTY CLAY LOAM,BROWN,FINE TO MEDIUM GRAIN,DRY 2.00m-3.50m SILTY CLAY,DARK BROWN,FIRM 3.50m-4.30m SILTY SAND,DARK GREY MEDIUM TO COARSE GRAINED,MOIST 4.30m-10.50m CLAYEY SAND,LIGHT GREY,MEDIUM GRAINED,DRY TO MOIST 10.50m-11.00m WEATHERED SHALE,DARK GREY,HARDER WITH DEPTH	1618m	South East
GW109805	0.00m-1.80m SILTY CLAY LOAM,BROWN,DRY 1.80m-2.80m SANDY LOAM,TRACE SILT, GREY/BROWN 2.80m-9.80m SAND,LIGHT BROWN, MEDIUM GRAINED,TRACE SILT 9.80m-12.00m SAND,GREY,MEDIUM GRAINED,WET,WEATHERED SHALE AT 12m	1714m	South East
GW108804	0.00m-7.50m SAND,BROWN,FINE TO MEDIUM GRAINED 7.50m-10.00m CLAY,ORANGE,GREY,CLAYEY SAND,DRY 10.00m-11.00m WEATHERED SHALE.DARK GREY	1921m	South East

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
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Geology 1:100,000

18 Randwick Close, Casula, NSW 2170



Geology

18 Randwick Close, Casula, NSW 2170

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
Qpn	Medium-grained sand, clay and silt				Quaternary		Penrith	1:100,000
Rwa	Dark-grey to black claystone-siltstone and fine sandstone -siltstone laminate	Ashfield Shale	Wianamatta Group (undifferentiated)		Middle Triassic		Penrith	1:100,000
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
Rwm	Fine to medium-grained quartz-lithic sandstone	Minchinbury Sandstone	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
Lineament		Coastal Lineament	Penrith	1:100,000

Geological Data Source : NSW Department of Industry, Resources & Energy
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Naturally Occurring Asbestos Potential

18 Randwick Close, Casula, NSW 2170

Naturally Occurring Asbestos Potential

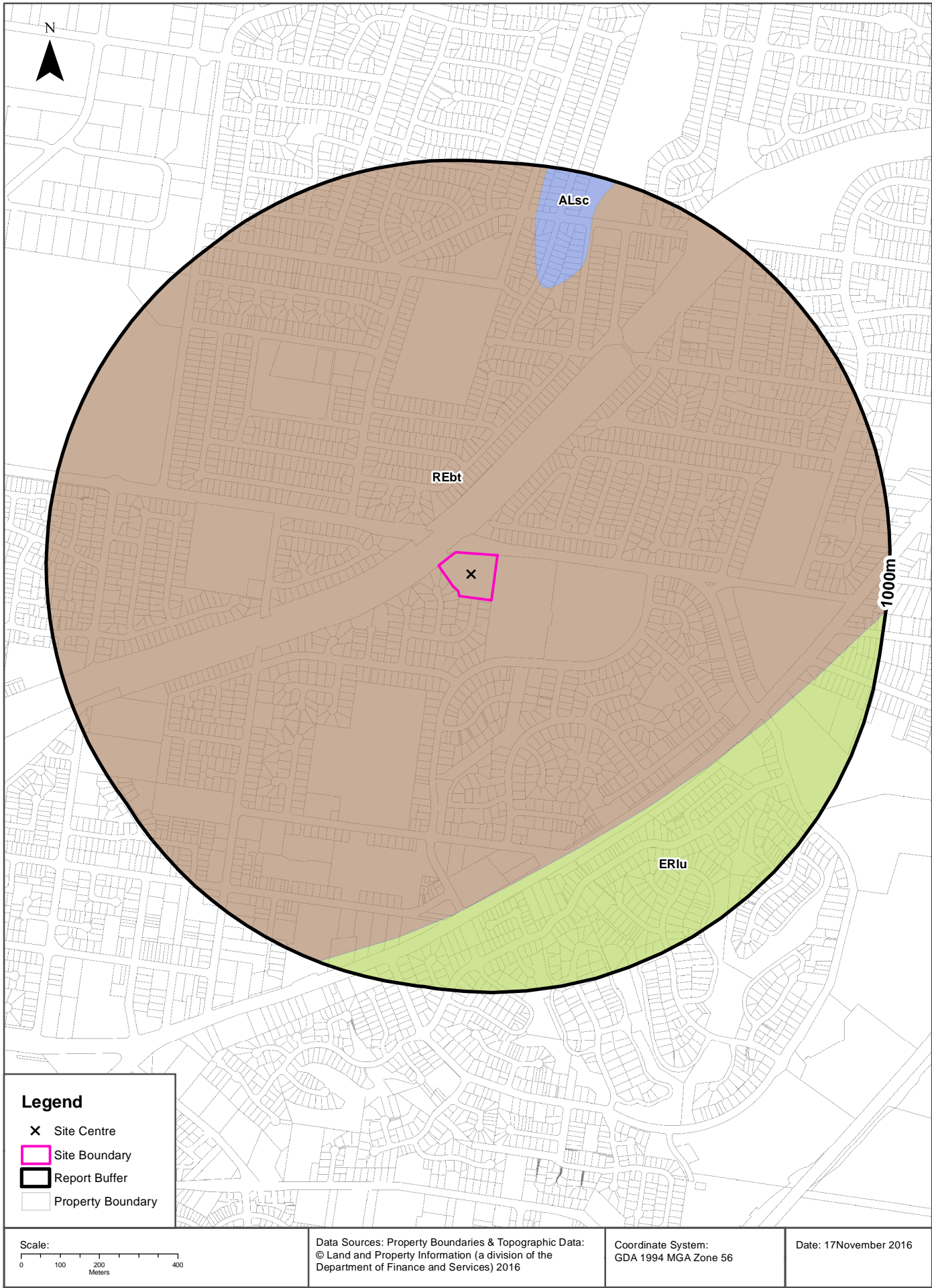
Naturally Occurring Asbestos Potential within the report buffer?

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

Mining Subsidence District Data Source: © State of New South Wales through NSW Department of Industry, Resources & Energy

Soil Landscapes

18 Randwick Close, Casula, NSW 2170



Soils

18 Randwick Close, Casula, NSW 2170

Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
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
ERlu	LUDDENHAM		EROSIONAL	Penrith	1:100,000
REbt	BLACKTOWN		RESIDUAL	Penrith	1:100,000

Soils Landscapes Data Source : NSW Office of Environment and Heritage

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Standard Local Environmental Plan Acid Sulfate Soils

18 Randwick Close, Casula, NSW 2170

Standard Local Environmental Plan Acid Sulfate Soils

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

Soil Class	Description	LEP
N/A		

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

Soil Class	Description	LEP	Distance	Direction
N/A				

Acid Sulfate Data Source Accessed 07/10/2016: NSW Crown Copyright - Planning and Environment
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Dryland Salinity

18 Randwick Close, Casula, NSW 2170

Dryland Salinity

Is there Dryland Salinity data onsite?

No

Is there Dryland Salinity data within the report buffer?

No

What Dryland Salinity assessments are given?

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

Dryland Salinity Data Source : National Land and Water Resources Audit

The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.

In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining Subsidence Districts

18 Randwick Close, Casula, NSW 2170

Mining Subsidence Districts

Mining Subsidence Districts within the report buffer?

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

Mining Subsidence District Data Source: © Land and Property Information (2016)
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Environmental Zoning

18 Randwick Close, Casula, NSW 2170

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

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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

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State Environmental Planning Policy Strategic Land Use Areas

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

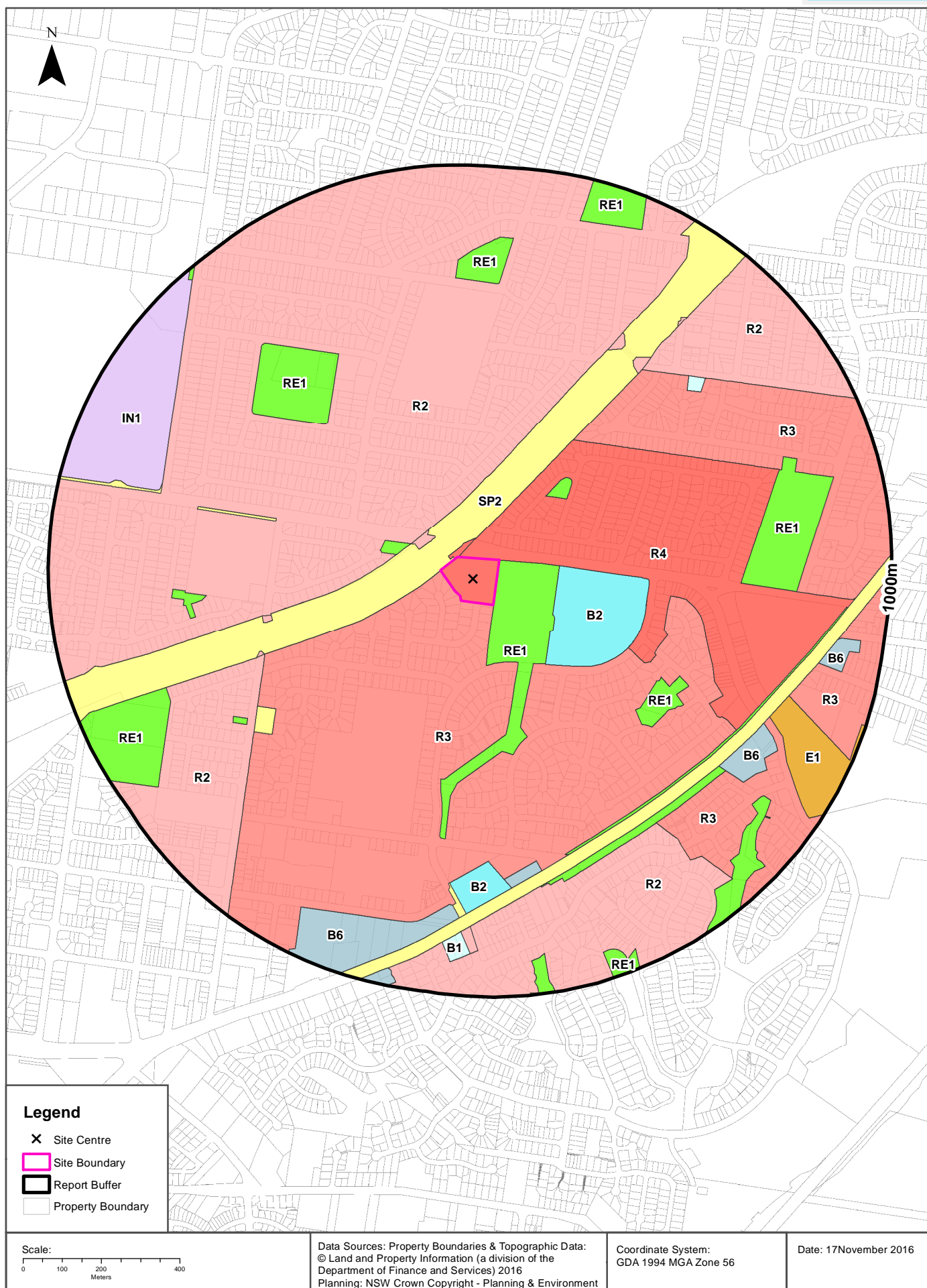
Strategic Land Use	SEPPNo	Effective Date	Amendment	Amendment Year	Distance	Direction
No records within buffer						

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

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LEP Planning Zones

18 Randwick Close, Casula, NSW 2170



Local Environmental Plan

18 Randwick Close, Casula, NSW 2170

Land Zoning

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

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R4	High Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		0m	Onsite
R3	Medium Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		0m	South
R4	High Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	0m	North West
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		0m	South East
SP2	Infrastructure	Classified Road	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		0m	West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	74m	North West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		100m	North West
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		101m	West
B2	Local Centre		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		152m	East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		202m	North East
R3	Medium Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		359m	East
SP2	Infrastructure	Local Road	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		438m	West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	28/06/2011	28/06/2011	12/08/2016	Amendment No 8	447m	West
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		450m	South East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		475m	North West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		496m	South West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	497m	West
SP2	Infrastructure	Water Supply System	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		547m	South West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	592m	North East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		600m	West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	601m	North East
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		606m	North East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		617m	East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		620m	South West
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		634m	South East
SP2	Infrastructure	Classified Road	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		640m	South
B1	Neighbourhood Centre		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		645m	North East
B2	Local Centre		Liverpool Local Environmental Plan 2008	17/04/2014	17/04/2014	12/08/2016	Amendment No 30	654m	South
B6	Enterprise Corridor		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		662m	South
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		672m	South East

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		692m	South
R3	Medium Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		693m	South East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		703m	North
B6	Enterprise Corridor		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		706m	South East
SP2	Infrastructure	Local Road	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		717m	South
SP2	Infrastructure	Local Road	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		740m	North West
IN1	General Industrial		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		744m	North West
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	748m	North East
E1	National Parks and Nature Reserves		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		758m	South East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		761m	South West
B6	Enterprise Corridor		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		771m	South
R3	Medium Density Residential		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		787m	East
R2	Low Density Residential		Liverpool Local Environmental Plan 2008	26/08/2011	26/08/2011	12/08/2016	Amendment No 8	821m	South
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		831m	South East
B1	Neighbourhood Centre		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		836m	South
B6	Enterprise Corridor		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		841m	East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		889m	North East
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		897m	South
B6	Enterprise Corridor		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		956m	South West
RE1	Public Recreation		Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		974m	North West

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Local Environmental Plan

18 Randwick Close, Casula, NSW 2170

Minimum Subdivision Lot Size

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

Symbol	Minimum Lot Size	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
U	1000 m ²	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	10/06/2016		95.54

Maximum Height of Building

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

Symbol	Maximum Height of Building	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
O	15.00 m	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/08/2016		99

Floor Space Ratio

What are the onsite Local Environmental Plan Floor Space Ratios?

Symbol	Floor Space Ratio	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
N	1.00	LEP	29/08/2008	29/08/2008	12/08/2016		98.6
D	0.50	LEP	29/08/2008	29/08/2008	12/08/2016		1.4

Land Application

What are the onsite Local Environmental Plan Land Applications?

Application Type	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
Included	Liverpool Local Environmental Plan 2008	29/08/2008	29/08/2008	12/06/2015		100

Land Reservation Acquisition

What are the onsite Local Environmental Plan Land Reservation Acquisitions?

Reservation	LEP	Published Date	Commenced Date	Currency Date	Amendment	Comments	Percentage of Site Area
No Data							

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Heritage

18 Randwick Close, Casula, NSW 2170

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
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Planning & Environment

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Local Heritage Items

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

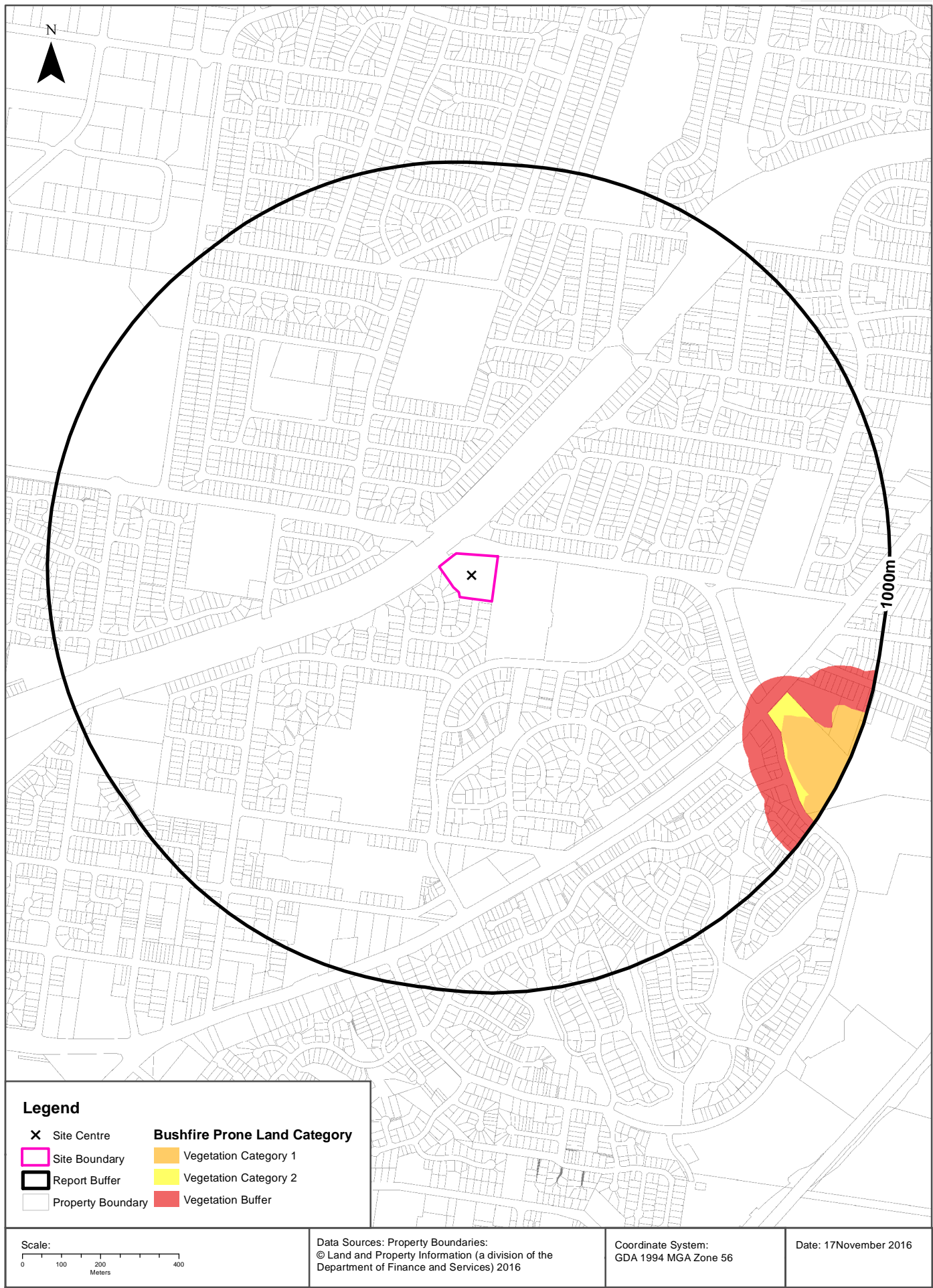
Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
N/A	No records in buffer								

Heritage Data Source: NSW Crown Copyright - Planning & Environment

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Natural Hazards - Bushfire Prone Land

18 Randwick Close, Casula, NSW 2170



Natural Hazards

18 Randwick Close, Casula, NSW 2170

Bushfire Prone Land

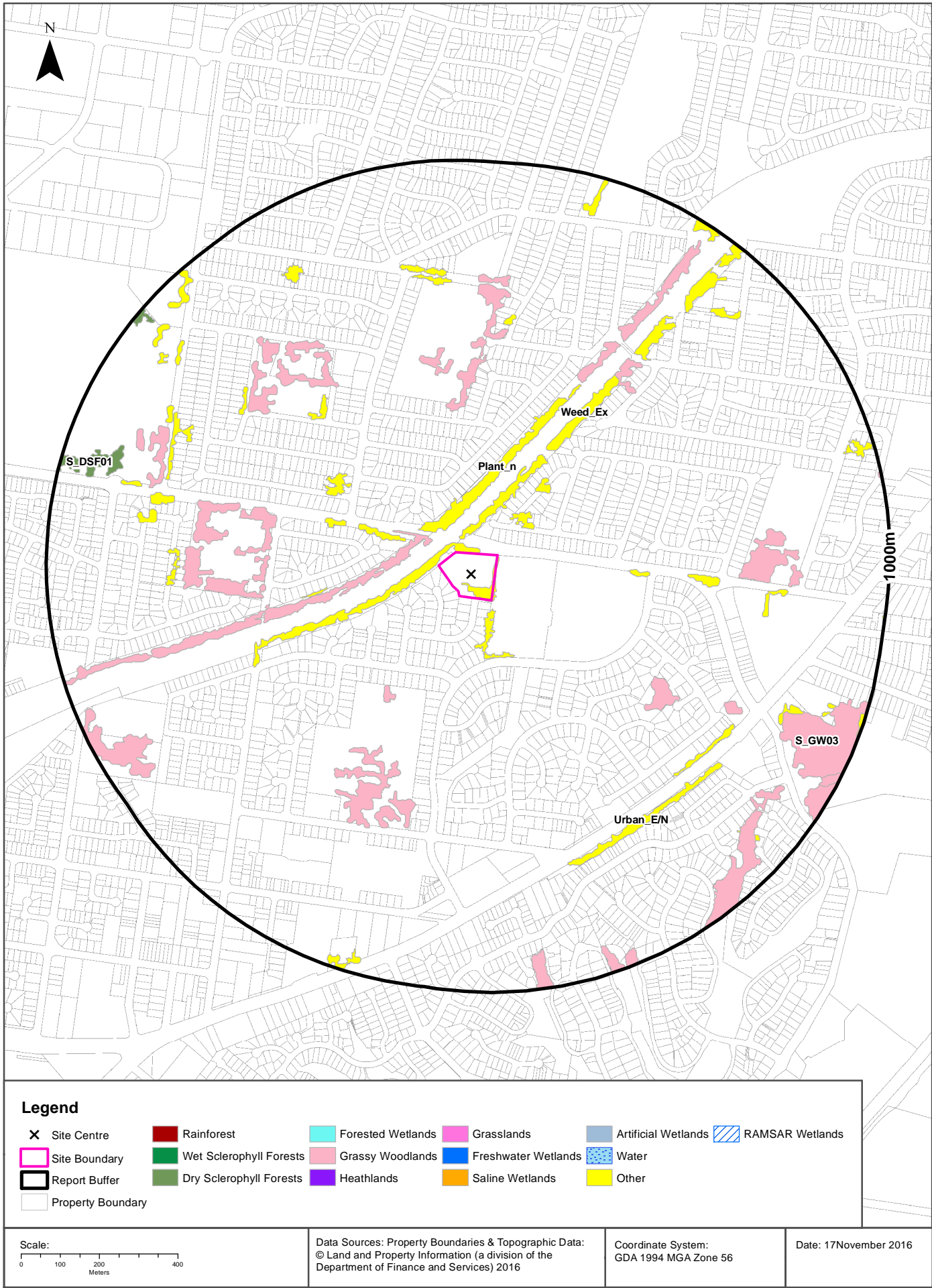
What are the nearest Bushfire Prone Land Categories that exist within the report buffer?

Bushfire Prone Land Category	Distance	Direction
Vegetation Buffer	699m	East
Vegetation Category 2	758m	South East
Vegetation Category 1	799m	South East

Bushfire Prone Land Data Reference - NSW RFS GIS Data Set

Ecological Constraints - Native Vegetation & RAMSAR Wetlands

18 Randwick Close, Casula, NSW 2170



Ecological Constraints

18 Randwick Close, Casula, NSW 2170

Native Vegetation

What native vegetation exists within the report buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Direction
Plant_n	Plant_n: Plantation (native and/or exotic)			00: Not assessed	00: Not assessed	0: Not assessed	Native or Exotic Plantations	0m	Onsite
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90% cover	0m	Onsite
S_GW03	S_GW03: Cumberland Shale Plains Woodland	Cumberland Plain Woodland	Cumberland Plain Woodland/ Shale Gravel Forest (possible)	13: Dry shrubs and grasses	31: Parkland open understorey	3: High	E.tereticornis/ E.moluccana+/- E.crebra/ E.eugenioides	58m	West
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/ Native	90m	North East
S_DSF01	S_DSF01: Castlereagh Ironbark Forest	Castlereagh/ Cooks River Ironbark Forest		15: Grassy natives and exotics	15: Regrowth	3: High	M.decora/ M.nodosa+/- scattered Eucalypts	841m	West

Native Vegetation of the Sydney Metropolitan Area : NSW Office of Environment and Heritage
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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

18 Randwick Close, Casula, NSW 2170

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
Amphibia	Myobatrachidae	Pseudophryne australis	Red-crowned Toadlet	No	Vulnerable, Protected	
Aves	Acanthizidae	Chthonicola sagittata	Speckled Warbler	No	Vulnerable, Protected	
Aves	Accipitridae	Circus assimilis	Spotted Harrier	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	Accipitridae	Pandion cristatus	Eastern Osprey	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Ardeidae	Botaurus poiciloptilus	Australasian Bittern	No	Endangered, Protected	Endangered
Aves	Artamidae	Artamus cyanopterus cyanopterus	Dusky Woodswallow	No	Vulnerable, Protected	
Aves	Burhinidae	Burhinus grallarius	Bush Stone-curlew	No	Endangered, Protected	
Aves	Cacatuidae	Callocephalon fimbriatum	Gang-gang Cockatoo	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Cacatuidae	Calyptorhynchus lathami	Glossy Black-Cockatoo	No	Vulnerable, Protected, Category 2 Sensitive Species	
Aves	Ciconiidae	Ephippiorhynchus asiaticus	Black-necked Stork	No	Endangered, Protected	
Aves	Falconidae	Falco subniger	Black Falcon	No	Vulnerable, Protected	
Aves	Meliphagidae	Anthochaera phrygia	Regent Honeyeater	No	Critically Endangered Species, Protected	Critically Endangered
Aves	Meliphagidae	Epthianura albifrons	White-fronted Chat	No	Vulnerable, Protected	
Aves	Meliphagidae	Epthianura albifrons	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	No	Endangered Population, Vulnerable, Protected	
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	Critically Endangered
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	
Gastropoda	Camaenidae	Meridolum corneovirens	Cumberland Plain Land Snail	No	Endangered	
Mammalia	Burramyidae	Cercartetus nanus	Eastern Pygmy-possum	No	Vulnerable, Protected	
Mammalia	Dasyuridae	Dasyurus maculatus	Spotted-tailed Quoll	No	Vulnerable, Protected	Endangered

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Mammalia	Emballonuridae	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	No	Vulnerable, Protected	
Mammalia	Macropodidae	Petrogale penicillata	Brush-tailed Rock-wallaby	No	Endangered, Protected	Vulnerable
Mammalia	Molossidae	Mormopterus norfolkensis	Eastern Freetail-bat	No	Vulnerable, Protected	
Mammalia	Petauridae	Petaurus norfolcensis	Squirrel Glider	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 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	
Flora	Anthericaceae	Caesia parviflora var. minor	Small Pale Grass-lily	No	Endangered, Protected	
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	Casuarinaceae	Allocasuarina diminuta subsp. mimica	Allocasuarina diminuta subsp. mimica L.A.S. Johnson population in the Sutherland and Liverpool local government areas	No	Endangered Population	
Flora	Casuarinaceae	Allocasuarina glaireicola		No	Endangered, Protected	Endangered
Flora	Dilleniaceae	Hibbertia sp. Bankstown		No	Critically Endangered Species, Protected	Critically Endangered
Flora	Ericaceae	Leucopogon exolasius	Woronora Beard-heath	No	Vulnerable, Protected	Vulnerable
Flora	Fabaceae (Faboideae)	Dillwynia tenuifolia		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Pultenaea pedunculata	Matted Bush-pea	No	Endangered, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia pubescens	Downy Wattle	No	Vulnerable, Protected	Vulnerable
Flora	Gyrostemonaceae	Gyrostemon thesioides		No	Endangered, Protected, Category 3 Sensitive Species	
Flora	Lamiaceae	Prostanthera saxicola	Prostanthera saxicola population in Sutherland and Liverpool local government areas	No	Endangered Population	
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	Eucalyptus scoparia	Wallangarra White Gum	No	Endangered, Protected	Vulnerable
Flora	Myrtaceae	Melaleuca deanei	Deane's Paperbark	No	Vulnerable, Protected	Vulnerable
Flora	Orchidaceae	Diuris aequalis	Buttercup Doubletail	No	Endangered, Protected, Category 2 Sensitive Species	Vulnerable
Flora	Orchidaceae	Pterostylis nigricans	Dark Greenhood	No	Vulnerable, Protected, Category 2 Sensitive Species	
Flora	Orchidaceae	Pterostylis saxicola	Sydney Plains Greenhood	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Proteaceae	Grevillea parviflora subsp. parviflora	Small-flower Grevillea	No	Vulnerable, Protected	Vulnerable
Flora	Proteaceae	Persoonia hirsuta	Hairy Geebung	No	Endangered, Protected, Category 3 Sensitive Species	Endangered

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Proteaceae	Persoonia nutans	Nodding Geebung	No	Endangered, Protected	Endangered
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 16/11/2016

USE OF REPORT – APPLICABLE TERMS

The following terms apply to any person (End User) who is given the Report by the person who purchased the Report from Lotsearch Pty Ltd (ABN: 89 600 168 018) (Lotsearch) or who otherwise has access to the Report. The contract terms that apply between Lotsearch and the purchaser of the Report are specified in the order form pursuant to which the Report was ordered and the terms set out below are of no effect as between Lotsearch and the purchaser of the Report.

1. End User acknowledges and agrees that:
 - (a) the Report is compiled from or using content (**Third Party Content**) which is comprised of:
 - (i) content provided to Lotsearch by third party content suppliers with whom Lotsearch has contractual arrangements or content which is freely available (**Third Party Content Suppliers**);
 - (j) content which is derived from content described in paragraph (i);
 - (b) Lotsearch does not take any responsibility for or give any warranty in relation to the accuracy or completeness of any Third Party Content included in the Report;
 - (c) the Third Party Content Suppliers do not constitute an exhaustive set of all repositories or sources of information available in relation to the property which is the subject of the Report (**Property**);
 - (d) Lotsearch has not undertaken any physical inspection of the property;
 - (e) Lotsearch does not warrant that all land uses or features whether past or current are identified in the Report;
 - (f) the Report does not include any information relating to the actual state or condition of the Property;
 - (g) the Report should not be used or taken to indicate or exclude actual fitness or unfitness of a Property for any particular purpose;
 - (h) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
 - (i) the End User should undertake its own inspection s of the Property to satisfy itself that there are no defects or failures.
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3. Neither Lotsearch (nor any of its officers, employees or agents) nor any of its Third Party Content Suppliers will have any liability to End User or any person to whom End User provides the Report and End User must not represent that Lotsearch or any of its Third Party Content Suppliers accepts liability to any such person or make any other representation to any such person on behalf of Lotsearch or any Third Party Content Supplier.
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5. End User acknowledges and agrees that Lotsearch and Third Party Content Suppliers retain ownership of all copyright, patent, design right (registered or unregistered), trade marks (registered or unregistered), database right or other data right, moral right or know how or any other intellectual property right in any Report or any other item, information or data included in or provided as part of a Report.
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9. Subject to paragraph 7, neither Lotsearch nor the End User is liable to the other for any indirect, incidental, consequential, special or exemplary damages arising out of or in relation to these terms.
10. These terms are subject to New South Wales law.

Appendix C

WorkCover Dangerous Goods Search



SafeWork NSW

Locked Bag 2906, Lisarow NSW 2252

Customer Experience 13 10 50

ABN 81 913 830 179 | www.safework.nsw.gov.au

Our Ref: D17/060368
Your Ref: Erin Millar

Attention: Erin Millar
Consulting Earth Scientists
Suite 3
Level 1
55 Grandview St
Pymble NSW 2073

Dear Ms Millar,

RE SITE: 18 Randwick CI Casula NSW

I refer to your site search request received by SafeWork NSW on 11 January 2016 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above mentioned premises.

For further information or if you have any questions, please call us on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,

Customer Service Officer
Customer Experience - Operations
SafeWork NSW

Appendix D

Historical Title Information



Cadastral Records Enquiry Report

Requested Parcel : Lot 104 DP 863214

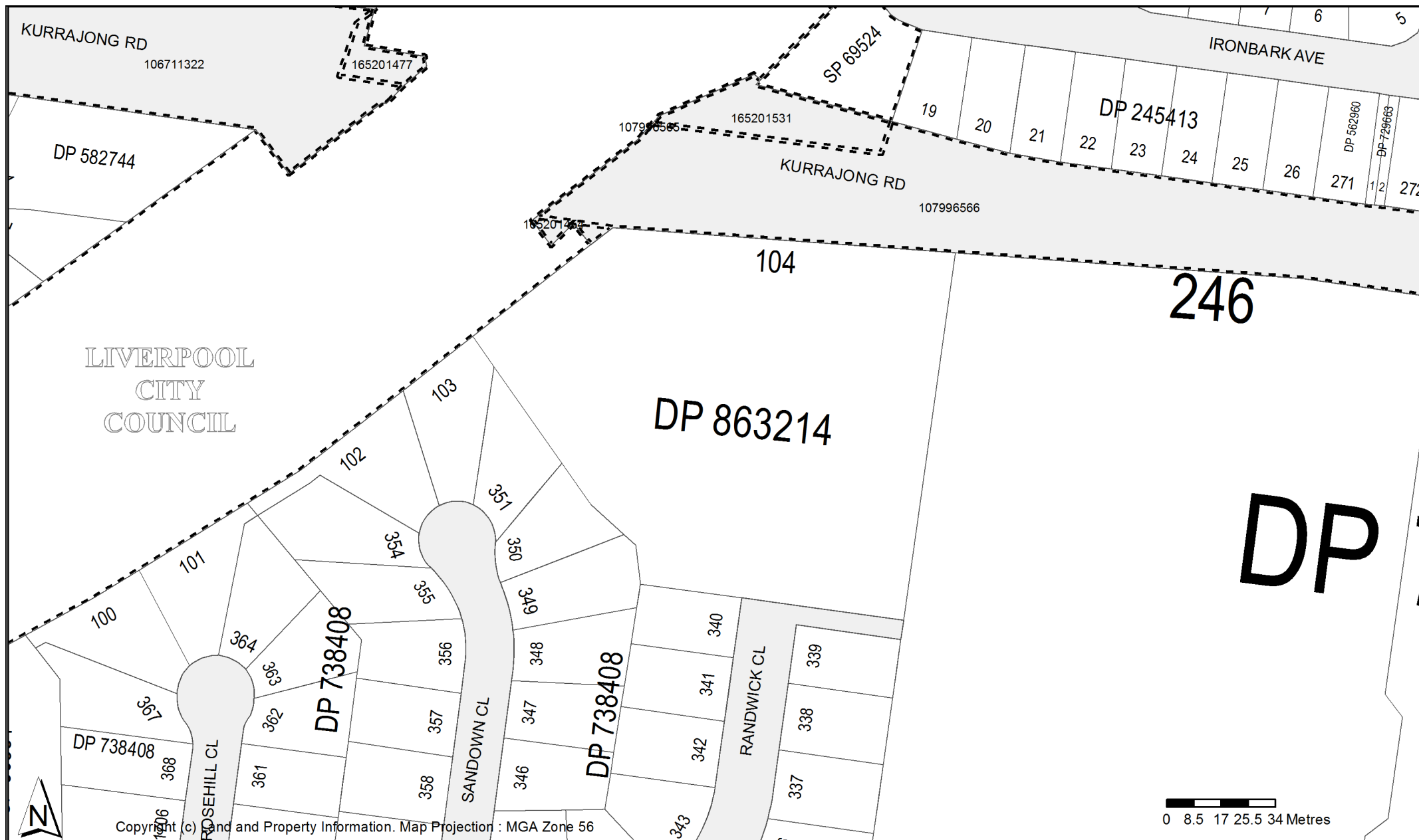
Identified Parcel : Lot 104 DP 863214

Locality : CASULA

LGA : LIVERPOOL

Parish : ST LUKE

County : CUMBERLAND



Cadastral Records Enquiry Report

Ref : Lotsearch - Casula

Requested Parcel : Lot 104 DP 863214

Identified Parcel : Lot 104 DP 863214

Locality : CASULA

LGA : LIVERPOOL

Parish : ST LUKE

County : CUMBERLAND







Status

Surv/Comp





Purpose

DP1045129

Lot(s): 1002

	DP3866	HISTORICAL	SURVEY	UNRESEARCHED
	DP775813	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
	DP846610	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
	DP847277	HISTORICAL	SURVEY	RESUMPTION OR ACQUISITION
	NSW GAZ. 27-12-2002			Folio : 11440
	ACQUIRED FOR THE PURPOSES OF THE ROADS ACT, 1993 LOTS 1001-1002 DP1045129			
	NSW GAZ. 04-05-2012			Folio : 1147
	DEDICATED PUBLIC ROAD LOTS 1-7 DP108413, THE AREA OF 18 3/4 PERCHES SHOWN ON DP361939, BEING PART OF LOT 9 DP17620, LOT 1 DP345211 AND LOTS 1-4 DP336498			

SP69524


	DP245413	HISTORICAL	SURVEY	SUBDIVISION
	DP810287	HISTORICAL	SURVEY	SUBDIVISION
	DP1035283	REGISTERED	SURVEY	SUBDIVISION
	DP1048266	REGISTERED	SURVEY	SUBDIVISION

Road


Polygon Id(s): 106711322

	NSW GAZ. 21-02-2003			Folio : 2451
	TRANSFER OF CROWN ROAD TO LIVERPOOL COUNCIL			

Polygon Id(s): 107996565, 107996566, 165201531

	NSW GAZ. 21-02-2003			Folio : 2451
	OLD KURRAJONG ROAD - TRANSFER OF CROWN ROAD TO LIVERPOOL COUNCIL			

Polygon Id(s): 165201454, 165201477, 165201531

	NSW GAZ. 17-12-2010			Folio : 5901
	DEDICATED PUBLIC ROAD LOTS 7-11 DP847277. ORDER PUBLISHED IN GOV. GAZ. 30-6-1993 FOL. 3337 IS REPEALED			

Caution: For all **ACTIVITY PRIOR to SEPT 2002** you must refer to the RGs Charting and Reference Maps.

Cadastral Records Enquiry Report

Ref : Lotsearch - Casula

Requested Parcel : Lot 104 DP 863214

Identified Parcel : Lot 104 DP 863214

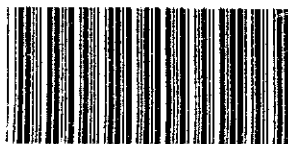
Locality : CASULA

LGA : LIVERPOOL

Parish : ST LUKE

County : CUMBERLAND

Plan	Surv/Comp	Purpose
DP245413	SURVEY	SUBDIVISION
DP253949	SURVEY	SUBDIVISION
DP562960	COMPILATION	SUBDIVISION
DP582744	SURVEY	SUBDIVISION
DP717422	SURVEY	SUBDIVISION
DP729663	COMPILATION	CROWN FOLIO CREATION
DP738408	SURVEY	SUBDIVISION
DP827089	SURVEY	SUBDIVISION
DP863214	SURVEY	SUBDIVISION
DP1045129	COMPILATION	ROADS ACT, 1993
SP56384	COMPILATION	STRATA PLAN
SP69524	COMPILATION	STRATA PLAN



09726148

G.

NEW SOUTH WALES

CERTIFICATE OF TITLE

PROPERTY ACT, 1900, as amended.

Application No.6436.
Prior Title Vol.3399 Fol.152.



MS

Vol. 9726 Fol. 148

1st Edition issued 11-6-1964

J646455

CANCELLED

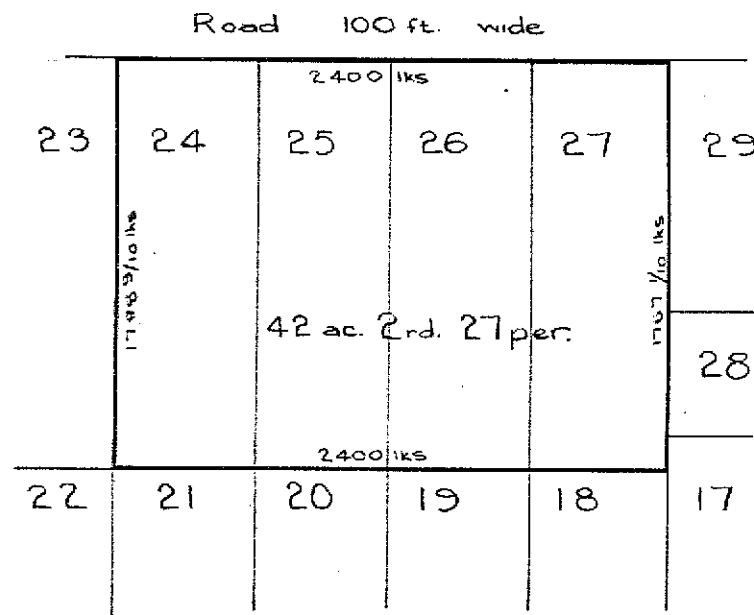
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness

Registrar-General.



PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lots 24 to 27 inclusive, Deposited Plan 7507, at Casula, in the City of Liverpool, Parish of St.Luke and County of Cumberland being part of Portion 271 granted to Richard Guise on 1-1-1810.

Registrar General.

FIRST SCHEDULE (Continued overleaf)

~~JOHN HORACE INGHAM and ROBERT WALTER INGHAM, both of Casula, Poultry Farmers.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) above referred to.
2. ~~Caveat No. G35592 by the Registrar General. Entered 6-4-1954. Withdrawn K376728.~~
3. ~~Mortgage No. H521934 to The Australian Temperance and General Mutual Life Assurance Society Limited. Entered 6-7-1960. Discharged K376726.~~
4. ~~Mortgage No. J70 to Cademan Investments Pty. Ltd. Entered 16-4-1962. Discharged J613673~~

Registrar General.

Ref:Lotsearch - Casula /Src:T

Form: 01T
Release: 3.1
www.lands.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

**AE15517A**

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the by this form for the establishment and maintenance of the Real Property the Register is made available to any person for search upon payment of a fee, if any.

Section 30B of the RP Act requires that
NEW SOUTH WALES DUTY

STAMP DUTY

Office of State Revenue use only

08-03-2007 0004109102-00
SECTION 291-ORIGINAL
NO DUTY PAYABLE

(A) TORRENS TITLE

Folio Identifier 104/862314 863214

(B) LODGED BYDocument
Collection
BoxName, Address, Contact and Telephone
DIBBS ABBOTT STILLMAN**DX 101 BOX 698B****LLPN: 123513F**

Reference: #787127- TWM: 3350051

CODES**T****TW**

(Sheriff)

(C) TRANSFEROR

INGHAMS PROCESSED POULTRY PTY LTD ABN 53 000 248 635
(now known as No. 8 Coy (IPP) Pty Ltd)

(D) CONSIDERATION

The transferor acknowledges receipt of the consideration of \$ 1.00

and as regards

(E) ESTATE

the land specified above transfers to the transferee an estate in fee simple

(F) SHARE**TRANSFERRED****(G)**

Encumbrances (if applicable):

(H) TRANSFEREE

INGHAMS ENTERPRISES PTY LTD ACN 008 447 345

(I)**TENANCY:****DATE**

- (J)** Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Corporation: INGHAMS PROCESSED POULTRY PTY LTD ABN 53 000 248 635
Authority: section 127 of the Corporations Act 2001

Signature of authorised person:

Signature of authorised person:

Name of authorised person:

JOHN RICHARD HEXTON

Name of authorised person:

ROBERT WALTER INGHAM

Office held:

DIRECTOR/SECRETARY

Office held:

DIRECTOR

~~Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.~~

~~Corporation: INGHAMS ENTERPRISES PTY LTD ACN 008 447 345~~

~~Authority: section 127 of the Corporations Act 2001~~

Signature of authorised person:

Signature of authorised person:

Name of authorised person:

Name of authorised person:

Office held:

Office held:

ANNEXURE PAGE TO TRANSFER

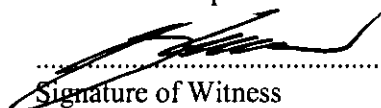
BETWEEN

INGHAMS PROCESSED POULTRY PTY LTD (ABN 53 000 248 635)

AND

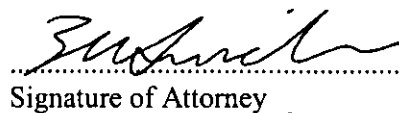
INGHAMS ENTERPRISES PTY LTD (ACN 008 447 345)

SIGNED SEALED and DELIVERED)
on behalf of)
ANZ CAPEL COURT LIMITED)
ACN 004 768 807)
by its duly authorised attorney under)
Power of Attorney dated 21/3/96 registered)
Book 4126 No. 822 and who declares that)
this power of attorney has not been)
revoked in the presence of:


.....
Signature of Witness

GARRY QUAN

.....
Name (printed)


.....
Signature of Attorney

Brendon Sinclair
.....
Name (printed)

5015 - 10000

Plan Drawing only to appear in this space

OFFICE USE ONLY

DP 862314

Registered: 10-9-1996

CA: NO. SA 86/95 OF 6-8-1996

Tide System: TIDRREN5

Purpose: SUBDIVISION

Ref. Map: PAR 15H 4F

Last Name: D. P. B 50456

PLAN OF SUBDIVISION OF
LOT 13 IN D.D. 444-154456

1

1

Lengths are in metres. Reduction Ratio 1:250

HAWKESBURY

Locality: KURPAJONG

NAME: TUCKER

.....

(Delete if inapplicable)

BOWDEN'S; D.Y. 6216, PARANAMITA.

A surveyor registered under the Surveyors Act 1928 hereby certifies that the survey represented on this plan is accurate from bench marks.

COMPILED BY: 6716176

AZIMUTH - 3.5 M. 57949 - 3.5 M. 56490

Plans used in preparation of survey/questionnaire

802295, 817229, 851931.
□ 3439 1603

PANEL FOR USE ONLY FOR SIGNPOSTS ON INTERSECTION
dedicates public roads, to create public reserves, draining

POSITIVE COVENANTS.
PUNISHMENT TO SEC. 666 OF THE

INTENDED TO CREATE:-

RESTRICTION ON THE USE OF LAND.

1000

Form: 01T
Release: 6-1**TRANSFEI**New South Wales
Real Property Act 1900**AJ542428H****PRIVACY NOTE:** Section 31B of the Real Property Act 1900 (RP Act) authorises

by this form for the establishment and maintenance of the Real Property Act Register. Section 95B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue

NSW Treasury

Client No: 83802746

1338

Duty: \$10

Trans No: 8156027-001

Asset details:

(A) TORRENS TITLE

FOLIO IDENTIFIER 104/863214

(B) LODGED BYDocument
Collection
Box

9877

Name, Address or DX, Telephone, and Customer Account Number if any

Landowner

1237067

Reference: DT: 19102291

CODES**T****TW****(C) TRANSFEROR**

INGHAMS PROPERTY MANAGEMENT PTY LIMITED ABN 81 168 279 703

(D) CONSIDERATION

The transferor acknowledges receipt of the consideration of \$ 8,100,000.00

and as regards

(E) ESTATE

the abovementioned land transfers to the transferee an estate in fee simple

**(F) SHARE
TRANSFERRED**

WHOLE

(G)

Encumbrances (if applicable):

(H) TRANSFeree

BESOL PTY LTD ACN 605 252 631

(I)**TENANCY:****DATE**

- (J)**
- Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Company: INGHAMS PROPERTY MANAGEMENT PTY LIMITED ABN 81 168 279 703

Authority: section 127 of the Corporations Act 2001

Signature of authorised person:

Signature of authorised person:

Name of authorised person:

Gregory Petrosch Welf
Director

Name of authorised person:

Raul Bruce Connolly
Secretary

Office held:

Office held:

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Signatory's name:

Signatory's capacity:

DAVID TINDALE
solicitor

- (K)**
- The transferee certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. Full name: Signature:

* s117 RP Act requires that you must have known the signatory for more than 12 months or have sighted identifying documentation.

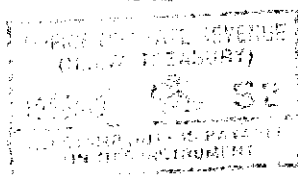
ALL HANDWRITING MUST BE IN BLOCK CAPITALS

Page 1 of 1

1303

OFF (X) AJ475438

-2 AUG 1988



X660435

TRANSFER

REAL PROPERTY ACT, 1900

CB	1 of 1	X
\$	39	

27/7

DESCRIPTION
OF LAND
Note (a)

Torrens Title Reference

Folio Identifier

XXXXXXXXXX

60/738407

If Part Only, Delete Whole and Give Details

XXXXXX

Part being

Lot 1 DP775813

Location

at Casula

TRANSFEROR
Note (b)

INGHAMS PROCESSED POULTRY PTY. LIMITED

ESTATE
Note (c)

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of \$ 740,000.00
and transfers an estate in fee simple
in the land above described to the TRANSFEREE

TRANSFEREE
Note (d)

MINISTER ADMINISTERING THE ENVIRONMENTAL PLANNING AND ASSESSMENT
ACT, 1979 of 175 Liverpool Street, Sydney.

OFFICE USE ONLY

OVER

TENANCY
Note (e)

as joint tenants/tenants in common

PRIOR
ENCUMBRANCES
Note (f)

subject to the following PRIOR ENCUMBRANCES 1.

2.

3.

DATE

24 June 1988

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION
Note (g)

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

The Common Seal of
INGHAMS PROCESSED POULTRY PTY. LIMITED
was hereunto affixed by authority of the
Board of Directors (BLOCK LETTERS)

Address and occupation of Witness

Director

Signature of Transferor

Secretary

Note (g)

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

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

RECEIVED by the Minister administering the Real Property Act, 1900, and I
hereby certify that I have received the execution of such delegation.

Signature of Transferee

TO BE COMPLETED
BY LODGING PARTY
Notes (h)
and (i)

LODGED BY

RB Kandy & Company

Delivery Box Number

435L

CT OTHER LOCATION OF DOCUMENTS

CT

Herewith.

In L.T.O. with

Produced by

OFFICE USE ONLY

Checked

Passed

REGISTERED

-19

Signed

Extra Fee



24 AUG 1988

Secondary
DirectionsDelivery
Directions

702

439
5-

INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Commissioner of Stamp Duties before lodgment by hand at the Land Titles Office.

Typewriting and handwriting should be clear, legible and in permanent dense black or dark blue non copying ink.

Alterations are not to be made by erasure; the words rejected are to be ruled through and initialled by the parties to the dealing in the left hand margin.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the parties and the attesting witnesses.

If it is intended to create easements, covenants, &c., use forms RPI3A, RPI3B, RPI3C as appropriate.

Rule up all blanks.

The following instructions relate to the SIDE NOTES on the form.

(a) Description of land:

(i) **TORRENS TITLE REFERENCE.**—For a manual reference insert the Volume and Folio (e.g., Vol. 8514 Fol. 126)—For a computer folio insert the folio identifier (e.g., 12/701924).

Title references should be listed in numerical sequence.

(ii) **PART/WHOLE.**—If part only of the land in the folio of the Register is being transferred, delete the word "WHOLE" and insert the lot and plan number, portion, &c. See also sections 327 and 327AA of the Local Government Act, 1919.

(iii) **LOCATION.**—Insert the locality shown on the Certificate of Title/Crown Grant, e.g., at Chullora. If the locality is not shown, insert the Parish and County, e.g., Ph. Lismore Co. Rous.

(b) Show the full name of the transferor(s).

(c) If the estate being transferred is a lesser estate than an estate in fee simple, delete "fee simple" and insert appropriate estate.

(d) Show the full name, address and occupation or description of the transferee(s).

(e) Delete if only one transferee. If more than one transferee, delete either "joint tenants" or "tenants in common", and, if the transferees hold as tenants in common, state the shares in which they hold.

(f) In the memorandum of prior encumbrances, state only the registered number of any mortgage, lease, charge or writ to which this dealing is subject.

(g) Execution:

GENERALLY

(i) Should there be insufficient space for execution of this dealing, use an annexure sheet.

(ii) The certificate of correctness under the Real Property Act, 1900, must be signed by all parties to the transfer, each party to execute the dealing in the presence of an adult witness, not being a party to the dealing, to whom he is personally known.

The solicitor for the transferee may sign the certificate on behalf of the transferee, the solicitor's name (not that of his firm), to be typewritten or printed adjacent to his signature.

Any person falsely or negligently certifying is liable to the penalties provided by section 117 of the Real Property Act, 1900.

ATTORNEY

(iii) If the transfer is executed by an attorney for the transferor/transferee pursuant to a registered power of attorney, the form of attestation must set out the full name of the attorney, and the form of execution must indicate the source of his authority, e.g., "AB by his attorney (or receiver or delegate, as the case may be) XY pursuant to power of attorney registered Book No. , and I declare that I have no notice of the revocation of the said power of attorney".

AUTHORITY

(iv) If the transfer is executed pursuant to an authority (other than specified in (iii)) the form of execution must indicate the statutory, judicial or other authority pursuant to which the transfer has been executed.

CORPORATION

(v) If the transfer is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g., in accordance with the Articles of Association of the corporation. Each person attesting the affixing of the seal must state his position (e.g., director, secretary) in the corporation.

(h) Insert the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.

(i) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. List, in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration, pbte for probate, L/A. for letters of administration, &c.

OFFICE USE ONLY

FIRST SCHEDULE DIRECTIONS

(A)	FOLIO IDENTIFIER	(B)	DIRECTION	(C)	NAME
			PROP		MINISTER ADMINISTERING THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979 of part being Lot 1 in DPT75813 and INGHAMS PROCESSED POULTRY PTM. LIMITED as to the residue being Lot 2 in DPT75813.
SECOND SCHEDULE AND OTHER DIRECTIONS					

(D)	FOLIO IDENTIFIER	(E)	DIRECTION	(F)	NOTFN TYPE	(G)	DEALING NUMBER	(H)	DETAILS
			CI				1000		



THE COMMON SEAL OF THE COMMONWEALTH OF AUSTRALIA
The Seal of the Commonwealth of Australia is the emblem of the Commonwealth of Australia and is used in accordance with the provisions of the Statute in that behalf.

THE COMMON SEAL OF THE COMMONWEALTH OF AUSTRALIA
The Seal of the Commonwealth of Australia is the emblem of the Commonwealth of Australia and is used in accordance with the provisions of the Statute in that behalf.



Director

Signature

Signature

SIGNATURES ONLY

Signed for and on behalf of Defence Housing Authority by Kingsley Wayne Prior its duly constituted attorney who declares that he has no knowledge of the revocation of Power of Attorney dated 30 May 1991 registered Book 3844 No. 898 on 3 July 1991 under the authority of which he has executed this instrument.

Witnessed by

Christina Catherine Cunningham
C/- 116 Miller St, Nth Sydney
Finance Officer

EXECUTED BY EASDA FINANCE CORPORATION
LIMITED A/CN 008 346 040 by Kingsley Wayne Prior
its duly constituted attorney who declares that he has no knowledge of the revocation of Power of Attorney dated 30 May 1991 registered Book 3844 No. 898 on 3 July 1991 under the authority of which he has executed this instrument.

Signed for and on behalf of ANZ Capital Co. A limited by Peter Westbury its duly constituted attorney who declares that he has no knowledge of the revocation of Power of Attorney dated 30 May 1991 registered Book 3844 No. 898 on 3 July 1991 under the authority of which he has executed this instrument.

Witnessed by
K. Prior

DP 863214

Registered: 28 23-10-1996

This is sheet 2 of my plan in 2 sheets dated

Surveyor registered under Surveyors Act 1932

This is sheet of my plan of streets covered by my Certificate No of

General Manager/Authorized Person

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

Reduction Ratio 1

Plan Drawing only to appear in this space

SURVEYOR'S REFERENCE: 52588

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

18/11/2016 2:44PM

FOLIO: 2/775813

First Title(s): OLD SYSTEM VOL 10847 FOL 219
Prior Title(s): 60/738407

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
23/6/1988	DP775813	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
25/8/1988	X660435	TRANSFER	FOLIO CREATED EDITION 1
17/9/1991	Z920502	MORTGAGE	EDITION 2
1/12/1992	DP827089	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

18/11/2016 2:45PM

FOLIO: 60/738407

First Title(s): OLD SYSTEM VOL 10847 FOL 219
Prior Title(s): 248/717422 VOL 5178 FOL 136
 VOL 11815 FOL 19 VOL 13080 FOL 161
 VOL 15384 FOL 210

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
22/12/1986	DP738407	DEPOSITED PLAN	FOLIO CREATED EDITION 1
23/6/1988	DP775813	DEPOSITED PLAN	
24/8/1988	X660435	TRANSFER	
24/8/1988	X792113	DEPARTMENTAL DEALING	FOLIO CANCELLED
24/7/2000	6968061	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

18/11/2016 2:34PM

FOLIO: 104/863214

First Title(s): OLD SYSTEM
Prior Title(s): 1707/827089

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
25/10/1996	DP863214	DEPOSITED PLAN	FOLIO CREATED EDITION 1
12/6/2008	AE15517	TRANSFER	EDITION 2
5/3/2009	AE528986	DISCHARGE OF MORTGAGE	EDITION 3
5/3/2009	AE528993	MORTGAGE	
18/10/2012	AH290669	DEPARTMENTAL DEALING	EDITION 4
3/7/2013	AH855062	DISCHARGE OF MORTGAGE	
8/10/2013	AI71523	MORTGAGE	
7/10/2014	AI940972	DISCHARGE OF MORTGAGE	EDITION 6
7/10/2014	AI940978	TRANSFER WITHOUT MONETARY CONSIDERATION	
7/10/2014	AI940079	MORTGAGE	
13/5/2015	AJ475438	CAVEAT	EDITION 7
4/6/2015	AJ542427	DISCHARGE OF MORTGAGE	
4/6/2015	AJ542428	TRANSFER	

*** END OF SEARCH ***

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Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

18/11/2016 2:59PM

FOLIO: 248/717422

First Title(s): OLD SYSTEM VOL 10847 FOL 219
Prior Title(s): VOL 9726 FOL 148

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
11/10/1985	DP717422	DEPOSITED PLAN	FOLIO CREATED EDITION 1
5/12/1986	DP738408	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS
27/4/1994	U212448	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

18/11/2016 2:42PM

FOLIO: 1707/827089

First Title(s): OLD SYSTEM
Prior Title(s): 2/775813

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
1/12/1992	DP827089	DEPOSITED PLAN	FOLIO CREATED EDITION 1
5/7/1993	I456814	TRANSFER OF MORTGAGE	EDITION 2
23/10/1996	DP863214	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act.

Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 104/863214

SEARCH DATE	TIME	EDITION NO	DATE
-----	----	-----	----
18/11/2016	2:32 PM	7	4/6/2015

LAND

LOT 104 IN DEPOSITED PLAN 863214
AT CASULA
LOCAL GOVERNMENT AREA LIVERPOOL
PARISH OF ST LUKE COUNTY OF CUMBERLAND
TITLE DIAGRAM DP863214

FIRST SCHEDULE

BESOL PTY LTD (T AJ542428)

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 LAND EXCLUDES MINERALS BY THE CROWN GRANT WITHIN THE PART SHOWN
SO DESIGNATED IN THE TITLE DIAGRAM
- 3 DP738407 RESTRICTION(S) ON THE USE OF LAND

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Lotsearch - Casul

PRINTED ON 18/11/2016

**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.*

Appendix E
Planning Certificate under Section 149

PLANNING CERTIFICATE UNDER SECTION 149
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Ref.: LS000827:40889

Ppty: 42720

Cert. No.: 2956

Page No.: 1 of 11

Applicant:

MR J LEE

LEVEL 3, 68 ALFRED ST

MILSONS POINT NSW 2061

Receipt No.: 3475091

Receipt Amt.: 133.00

Date: 17-Nov-2016

The information in this certificate is provided pursuant to Section 149(2)&(5) of the Environmental Planning and Assessment Act (EP&A Act) 1979, as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation (EP&A Regulation) 2000. The information has been extracted from Council's records, as they existed at the date listed on the certificate. Please note that the accuracy of the information contained within the certificate may change after the date of this certificate due to changes in Legislation, planning controls or the environment of the land.

The information in this certificate is applicable to the land described below.

Legal Description: LOT 104 DP 863214**Street Address:** 18 RANDWICK CLOSE, CASULA NSW 2170

Note: Items marked with an asterisk () may be reliant upon information transmitted to Council by a third party public authority. The accuracy of this information cannot be verified by Council and may be out-of-date. If such information is vital for the proposed land use or development, applicants should instead verify the information with the appropriate authority.*

Note: Commonly Used Abbreviations:

LEP: Local Environmental Plan

DCP: Development Control Plan

SEPP: State Environmental Planning Policy

EPI: Environmental Planning Instrument

1. Names of relevant planning instruments and DCPs

(a) The name of each EPI that applies to the carrying out of development on the land is/are listed below:

LEPs:

Liverpool LEP 2008

SEPPs*:

**SEPP No 19 – Bushland in Urban Areas
SEPP No 21 – Caravan Parks
SEPP No 30 – Intensive Agriculture
SEPP No 33 – Hazardous and Offensive Development
SEPP No 44 – Koala Habitat Protection
SEPP No 50 – Canal Estate Development
SEPP No 55 – Remediation of Land
SEPP (Exempt and Complying Development Codes) 2008
SEPP No 62 – Sustainable Aquaculture
SEPP No 64 – Advertising and Signage
SEPP No 65 – Design Quality of Residential Flat Development
SEPP (Building Sustainability Index: BASIX) 2004
SEPP No. 70 – Affordable Housing (Revised Schemes)
SEPP (Infrastructure) 2007
SEPP (Mining, Petroleum Production and Extractive Industries) 2007
SEPP (Miscellaneous Consent Provisions) 2007
SEPP (Affordable Rental Housing) 2009
SEPP (Housing for Seniors or People with a Disability) 2004
SEPP (State and Regional Development) 2011**

Deemed SEPPs*:

Greater Metropolitan Regional Environmental Plan No 2 – Georges River Catchment

(b) The name of each draft EPI, or Planning Proposal (which has been subject to community consultation).

Draft LEPs:

N/A

Draft SEPPs*:

Draft SEPP (Competition) 2010

(c) The name of each DCP that applies to the carrying out of development on the land.

Liverpool DCP 2008

2. Zoning and land use under relevant LEPs and /or SEPPs

This section contains information required under subclauses 2 and 2A of Schedule 4 of the EP&A Regulation 2000. Subclause 2 of the regulation requires Council to provide information with respect to zoning and land-use in areas zoned by, or proposed to be zoned by, a LEP. Subclause 2A of Schedule 4 of the regulation requires Council to provide information with respect to zoning and land-use in areas which are zoned by, or proposed to be zoned by, the SEPP (Sydney Region Growth Centres) 2006. The land use and zoning information under any EPI applying to the land is given below.

(a) Name of zone, and the EPI from which the land zoning information is derived.

R4 High Density Residential - Liverpool LEP 2008

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Attached dwellings; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dwelling houses; Educational establishments; Environmental facilities; Environmental protection works; Exhibition homes; Exhibition villages; Flood mitigation works; Home businesses; Home industries; Hostels; Hotel or motel accommodation; Kiosks; Multi dwelling housing; Neighbourhood shops; Places of public worship; Public administration buildings; Recreation areas; Residential care facilities; Residential flat buildings; Respite day care centres; Roads; Secondary dwellings; Serviced apartments; Shop top housing

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c)

(e) If a dwelling house is a permitted use, are there any principal development standards applying to the land that fix minimum land dimensions for the erection of a dwelling house?

No

(f) Does the land include or comprise critical habitat?

No

(g) Is the land in a conservation area (however described):

No

(h) Is there an item of environmental heritage (however described) situated on the land

No

3. Complying development

The information below outlines whether complying development is permitted on the land as per the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1) (c3) and 1.19 SEPP of the (Exempt and Complying Development Codes) 2008.

The first column identifies the code(s). The second column describes the extent of the land in which exempt and complying development is permitted for the code(s) given to the immediate left. The third column indicates the reason as to why exempt and complying development is prohibited on some or all of the land, and will be blank if such development is permitted on all of the land.

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:
General Housing Code and Rural Housing Code	All	
Commercial and Industrial (New Buildings and Additions) Code	All	
General Development Code, Fire Safety Code, Housing Alterations Code, Commercial and Industrial Alterations Code, Subdivisions Code, and Demolition Code	All	

Note: If council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement below will describe that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Nil

4. Coastal protection*

Has the Department of Finance, Services and Innovation notified Council of the land being affected by 38 or 39 of the Coastal Protection Act, 1979?

No

4A. Certain information relating to beaches and coasts*

(a) Has an order has been made under Part 4D of the Coastal Protection Act 1979 on the land (or on public land adjacent to that land)?

No

(b) Has Council been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works have been placed on the land (or on public land adjacent to that land), and if works have been so placed, is council is satisfied that the works have been removed and the land restored in accordance with that Act?

Not applicable

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works*

Has the owner (or any previous owner) of the land consented, in writing, that the land is subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act)?

No

5. Mine subsidence*

Is the land a proclaimed to mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961?

No

6. Road widening and road realignment

Is the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the Roads Act 1993?*

No

(b) An EPI?

No

(c) A resolution of the council?

No

7. Council and other public authority policies on hazard risk restrictions

The following table lists hazard/risk and the policies that have been adopted by Council (or prepared by another public authority and subsequently adopted by Council). The right-most column indicates whether the land is subject to controls from those policies.

Hazard/Risk	Adopted Policy	Is the land subject to development controls under that policy?
Landslip hazard	Nil	No
Bushfire hazard	Liverpool DCP 2008	No
	Liverpool Growth Centre Precincts DCP*	No
	Edmondson Park South DCP 2012	No
	Planning for Bushfire Protection (Rural Fire Services, 2006)*	No
	Pleasure Point Bushfire Management Plan	No
Tidal inundation	Nil	No
Subsidence	Nil	No
Acid Sulphate Soils	Liverpool LEP 2008	No
	Liverpool DCP 2008	No
Potentially Contaminated Land	Liverpool DCP 2008	Potentially , see section 10 of Part 1 of the Liverpool DCP 2008
	Liverpool Growth Centre Precincts DCP*	No
Potentially Saline Soils	Liverpool DCP 2008	Yes
	Liverpool Growth Centre Precincts DCP*	No

Note: Land that is subject to salinity controls under the Liverpool DCP 2008 is derived from salinity potential maps issued by NSW Government. The information in the table above neither confirms nor denies the presence of saline soils.

Note: The information in the table above neither confirms nor denies whether the land is contaminated. The relevant DCP outlines the triggers which may warrant additional investigation, and/or development controls if contamination is confirmed.

7A. Flood related development controls information

- (a) For the purpose of residential accommodation (excluding group homes or seniors housing), is the land, or part of the land, within the flood planning area and subject to flood planning controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

- (b) Is development on that land, or part of the land, for any other purpose subject to flood related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

Note: Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the Standard Instrument (Local Environmental Plans) Order 2006.

8. Land reserved for acquisition

Does a LEP, draft LEP, SEPP or draft SEPP identify the acquisition of the land, or part of the land, by a public authority, as referred to in section 27 of the Act?

No

9. Contribution Plans

Liverpool Contributions Plan 2009

9A. Biodiversity certified land*

Is the land, or part of the land, biodiversity certified land (within the meaning of Part 7AA of the Threatened Species Conservation Act 1995)?

No

10. Biobanking agreements*

Is the land subject to a bio-banking agreement under Part 7A of the Threatened Species Conservation Act 1995, as notified to Council by the Chief Executive of the Office of Environment and Heritage?

No

11. Bushfire prone land

Is the land or part of the land, bushfire prone land as defined by the EP&A Act 1979?

No

12. Property vegetation plans*

Is Council aware of the land being subject to a Property Vegetation Plan under the Native Vegetation Act 2003?

No, Liverpool is excluded from the operation of the Native Vegetation Act 2003

13. Orders under Trees (Disputes between Neighbours) Act 2006*

Does an order, made under the Trees (Disputes Between Neighbours) Act 2006 in relation to carrying out of work in relation to a tree on the land, apply?

No, Council has not been notified of an order

14. Directions under Part 3A*

Is there a direction (made by the Minister) that a provision of an EPI in relation to a development does not have effect?

No

15. Site compatibility certificates and conditions for seniors housing*

(a) Is there is a current site compatibility certificate (seniors housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

16. Site compatibility certificates for infrastructure*

(a) Is there is a current site compatibility certificate (infrastructure), in respect of proposed development on the land?

No, Council has not been notified of an order

17. Site compatibility certificates and conditions for affordable rental housing*

Is there is a current site compatibility certificate (Affordable housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

18. Paper subdivision information*

Does any development plan adopted by a relevant authority (or proposed plan subject to a consent ballot) apply to the land? If so the date of the subdivision order that applies to the land.

No

19. Site verification certificates*

Does a current site verification certificate, apply to the land?

No, Council is not aware of a site verification certificate

20. Loose-fill asbestos insulation *

Is a dwelling on the land listed on the register (maintained by the NSW Department of Fair Trading) as containing loose-fill asbestos insulation?

No

Note: despite any listing on the register, any buildings constructed before 1980 may contain loose-fill asbestos insulation or other asbestos products.

21. Contaminated land

Is the land:

(a) Significantly contaminated land within the meaning of that Act?

No

(b) Subject to a management order within the meaning of that Act?

No

(c) Subject of an approved voluntary management proposal within the meaning of that Act?

No

(d) Subject to an ongoing maintenance order within the meaning of that Act?

No

(e) Subject of a site audit statement within the meaning of that Act? *

No

Note: in this clause 'the Act' refers to the Contaminated Land Management Act 1997.

THE FOLLOWING INFORMATION IS PROVIDED PURSUANT TO SECTION 149(5) OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT (EP&A ACT) 1979

1. Controlled access road

Does the land have a boundary to a controlled access road?

Yes

2. Sewer Access and On-site Management

Nil

3. Other Information in Relation to Water Restrictions

Nil

4. Contaminated Land

Nil

5. Airport Noise Affectation*

Nil

6. Environmentally Significant Land

Nil

7. Archaeological Management Plan

Nil

8. Offensive Odour and Rural Land Uses

Nil



Luke West

For further information, please contact
CALL CENTRE – 1300 36 2170

Administration Services Coordinator
Liverpool City Council

Appendix F

Dial Before You Dig Plans

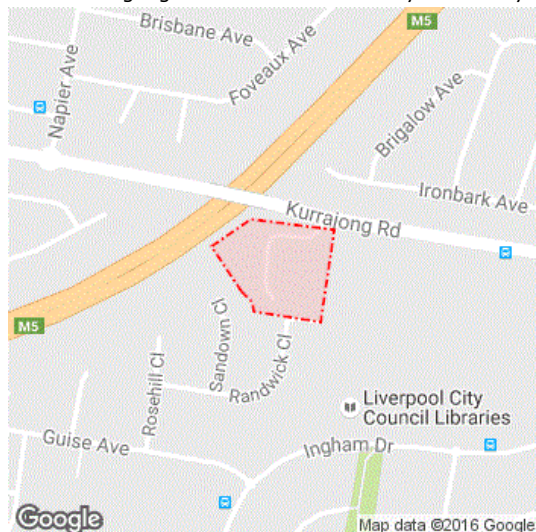
Caller Details

Contact: Mr Miles Thompson
Company: Consulting Earth Scientists Pty Ltd
Address: Grandview Street
Pymble NSW 2073

Caller Id: 1598835
Mobile: Not Supplied
Email: miles.thompson@consultingearth.com.au
Phone: 0497018918
Fax: Not Supplied

Dig Site and Enquiry Details

WARNING: The map below only displays the location of the proposed dig site and does not display any asset owners' pipe or cables. The area highlighted has been used only to identify the participating asset owners, who will send information to you directly.



User Reference: CES161003
Working on Behalf of: Private
Enquiry Date: 24/10/2016
Start Date: 31/10/2016
End Date: 04/11/2016
Address: 18 Randwick Close
Casula NSW 2170
Job Purpose: Excavation
Onsite Activity: Vertical Boring
Location of Workplace: Private Property
Location in Road: Not Supplied

- Check that the location of the dig site is correct. If not you must submit a new enquiry.
- Should the scope of works change, or plan validity dates expire, you must submit a new enquiry.
- Do NOT dig without plans. Safe excavation is your responsibility. If you do not understand the plans or how to proceed safely, please contact the relevant asset owners.

Notes/Description of Works:

Geotechnical and environment drilling

Your Responsibilities and Duty of Care

- If plans are not received within 2 working days, contact the asset owners directly & quote their Sequence No.
- ALWAYS perform an onsite inspection for the presence of assets. Should you require an onsite location, contact the asset owners directly. Please remember, plans do not detail the exact location of assets.
- Pothole to establish the exact location of all underground assets using a hand shovel, before using heavy machinery.
- Ensure you adhere to any State legislative requirements regarding Duty of Care and safe digging requirements.
- If you damage an underground asset you MUST advise the asset owner immediately.
- By using this service, you agree to Privacy Policy and the terms and disclaimers set out at www.1100.com.au
- For more information on safe excavation practices, visit www.1100.com.au

Asset Owner Details

The assets owners listed below have been requested to contact you with information about their asset locations within 2 working days. Additional time should be allowed for information issued by post. It is **your responsibility** to identify the presence of any underground assets in and around your proposed dig site. Please be aware, that not all asset owners are registered with the Dial Before You Dig service, so it is **your responsibility** to identify and contact any asset owners not listed here directly.

** Asset owners highlighted by asterisks ** require that you visit their offices to collect plans.

Asset owners highlighted with a hash require that you call them to discuss your enquiry or to obtain plans.

Seq. No.	Authority Name	Phone	Status
56510214	Endeavour Energy	0298534161	NOTIFIED
56510216	Jemena Gas West	1300880906	NOTIFIED
56510213	PIPE Networks, Nsw	1800201100	NOTIFIED
56510212	Roads and Maritime Services	0288370285	NOTIFIED
56510217	Sydney Water	132092	NOTIFIED
56510215	Telstra NSW, Central	1800653935	NOTIFIED

END OF UTILITIES LIST

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty (20) working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

LEGEND

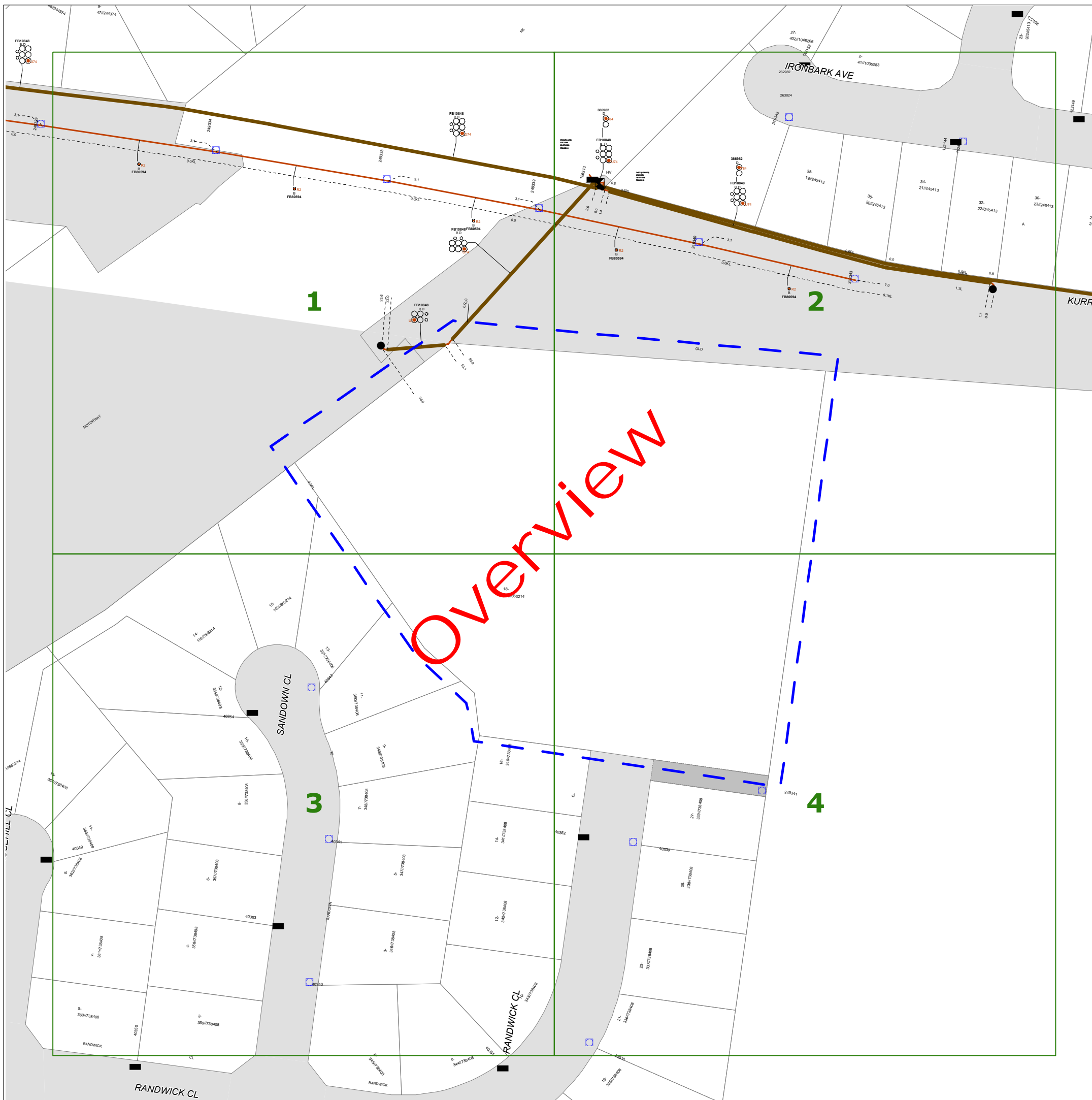
- or ■ Street light column
- ▤ Padmount substation
- or ■ Overground pillar (O.G.Box)
- ▤ Underground pit
- Duct run
- Cable run
- ⊙ Typical duct section
- ▲ Asbestos warning

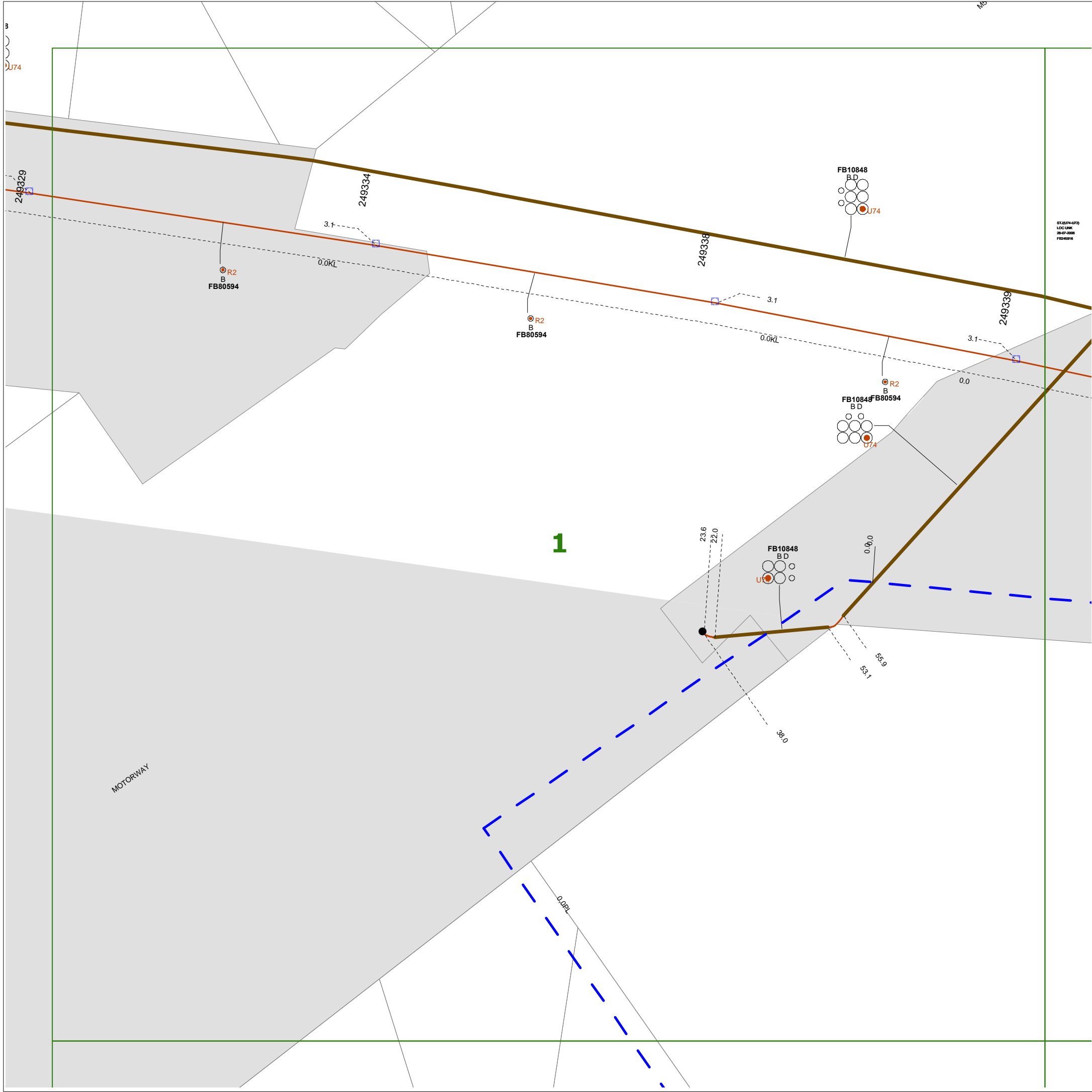


NOT TO SCALE

DBYD Sequence No.:	56510214
Issued Date:	24/10/2016

Cadastre: © Land and Property Information 2015, 2016





WARNING

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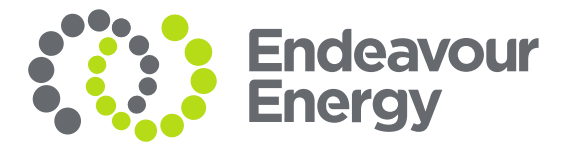
LEGEND

- or ■ Street light column
- ▤ Padmount substation
- or ■ Overground pillar (O.G.Box)
- ▤ Underground pit
- Duct run
- Cable run
- Typical duct section
- ▲ Asbestos warning



NOT TO SCALE

DBYD Sequence No.:	56510214
Issued Date:	24/10/2016



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






INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

LEGEND

- | | | | |
|---|----|---|-----------------------------|
|  | or |  | Street light column |
|  | | | Padmount substation |
|  | or |  | Overground pillar (O.G.Box) |
|  | | | Underground pit |
|  | | | Duct run |
|  | | | Cable run |
|  | | | Typical duct section |
|  | | | Asbestos warning |



NOT TO SCALE

DBYD Sequence No.:	56510214
Issued Date:	24/10/2016

Cadastre: © Land and Property Information 2015, 2016

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.











INFORMATION PROVIDED BY ENDEAVOUR ENERGY

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- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
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DISCLAIMER

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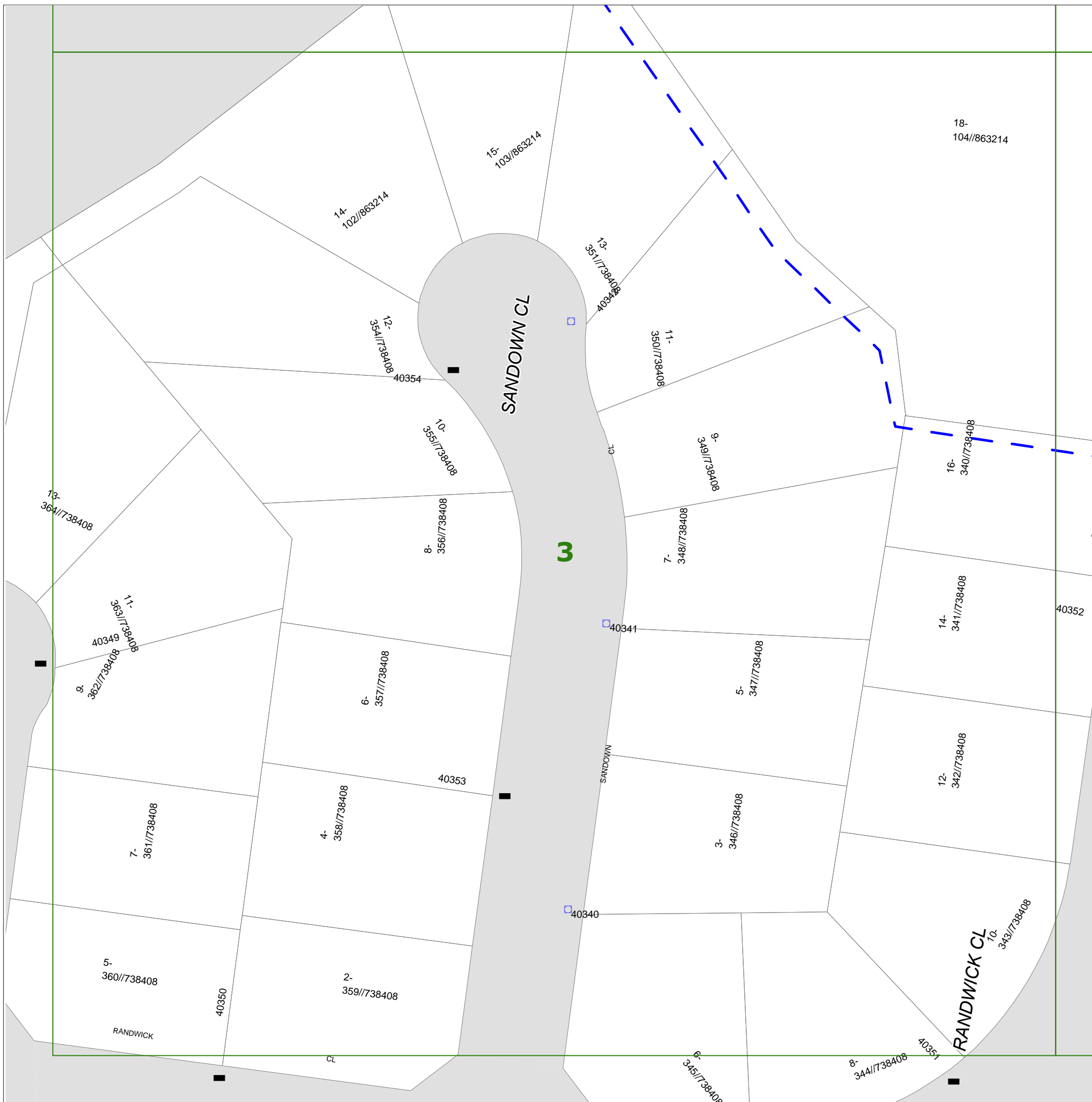
LEGEND

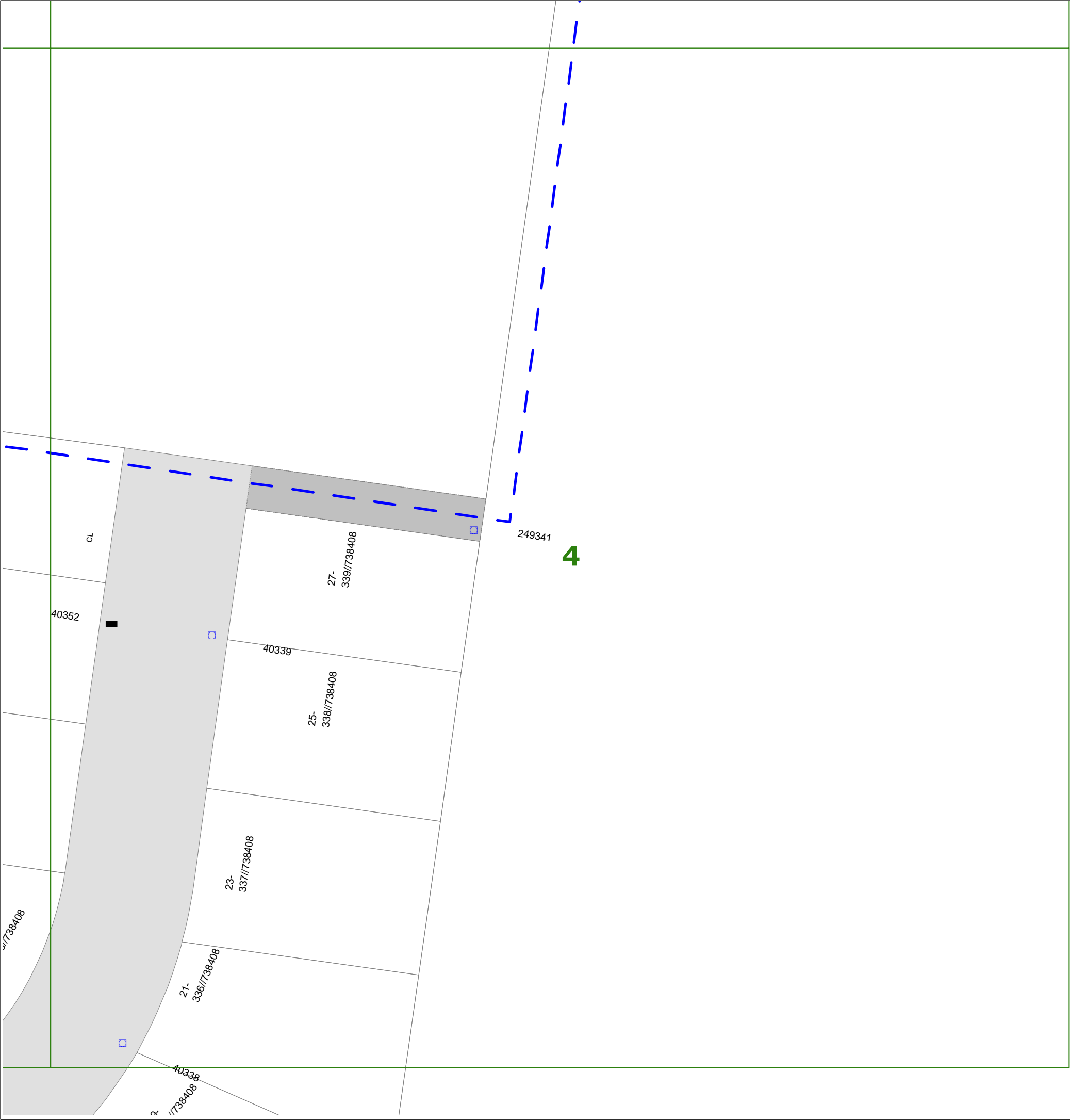
-  or  Street light column
-  Padmount substation
-  or  Overground pillar (O.G.Box)
-  Underground pit
-  Duct run
-  Cable run
-  Typical duct section
-  Asbestos warning

**NOT TO SCALE**

DBYD Sequence No.:	56510214
Issued Date:	24/10/2016

Cadastre: © Land and Property Information 2015, 2016





WARNING

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- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
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- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
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DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

LEGEND

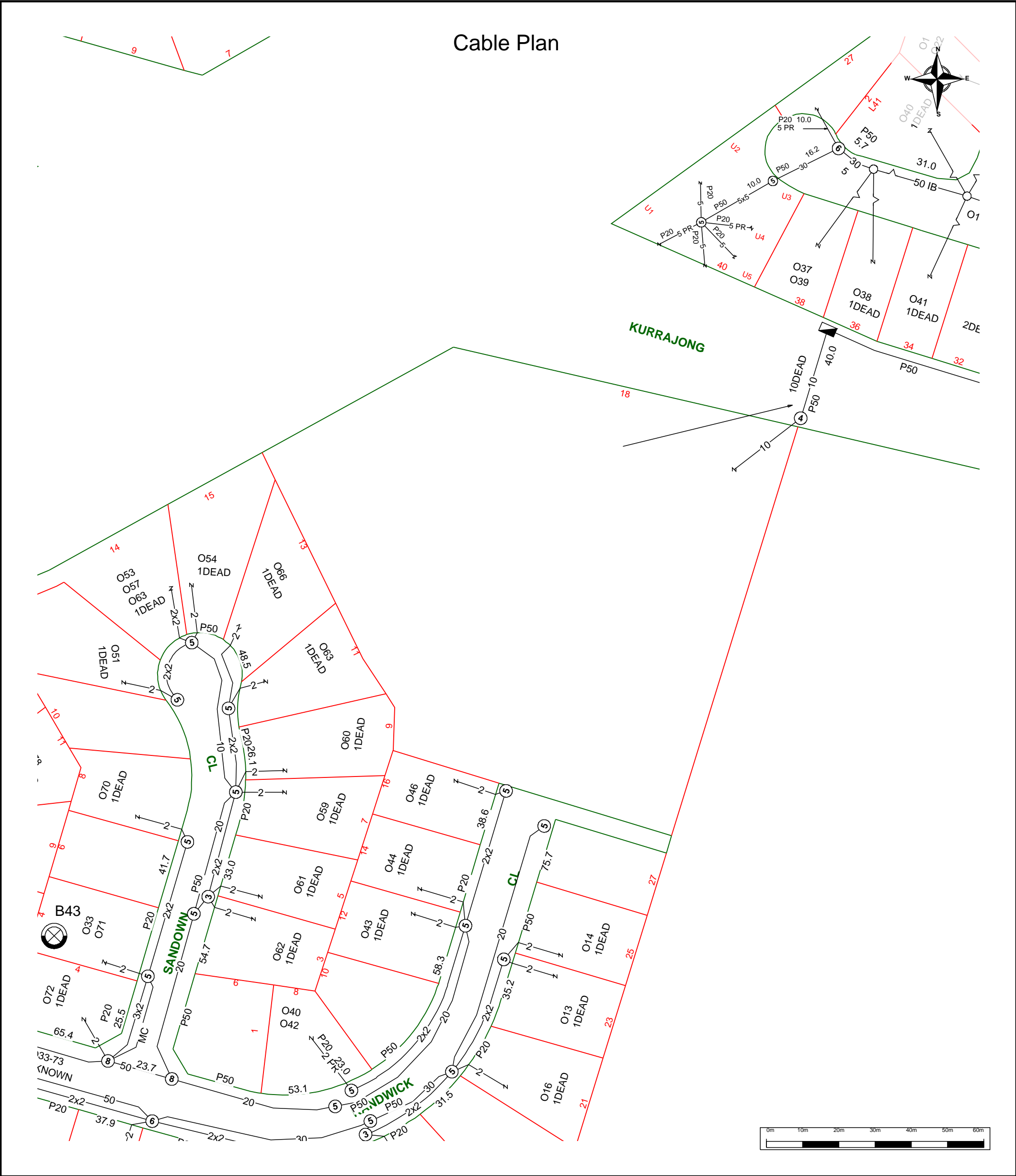
- or ■ Street light column
- ▭ Padmount substation
- or ■ Overground pillar (O.G.Box)
- ▭ Underground pit
- ▬ Duct run
- ▬ Cable run
- Typical duct section
- ▲ Asbestos warning




NOT TO SCALE

DBYD Sequence No.:	56510214
Issued Date:	24/10/2016

Cable Plan



	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)	Sequence Number: 56510215
	TELSTRA CORPORATION LIMITED A.C.N. 051 775 556	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.
Generated On 24/10/2016 11:07:22		

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

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.

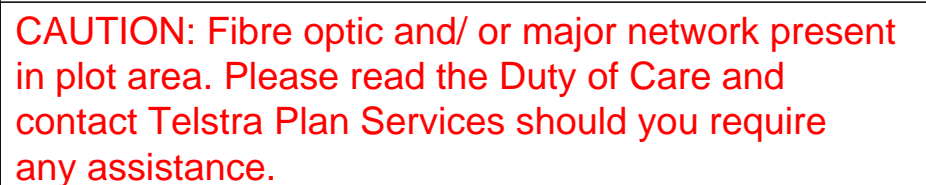
It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

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.

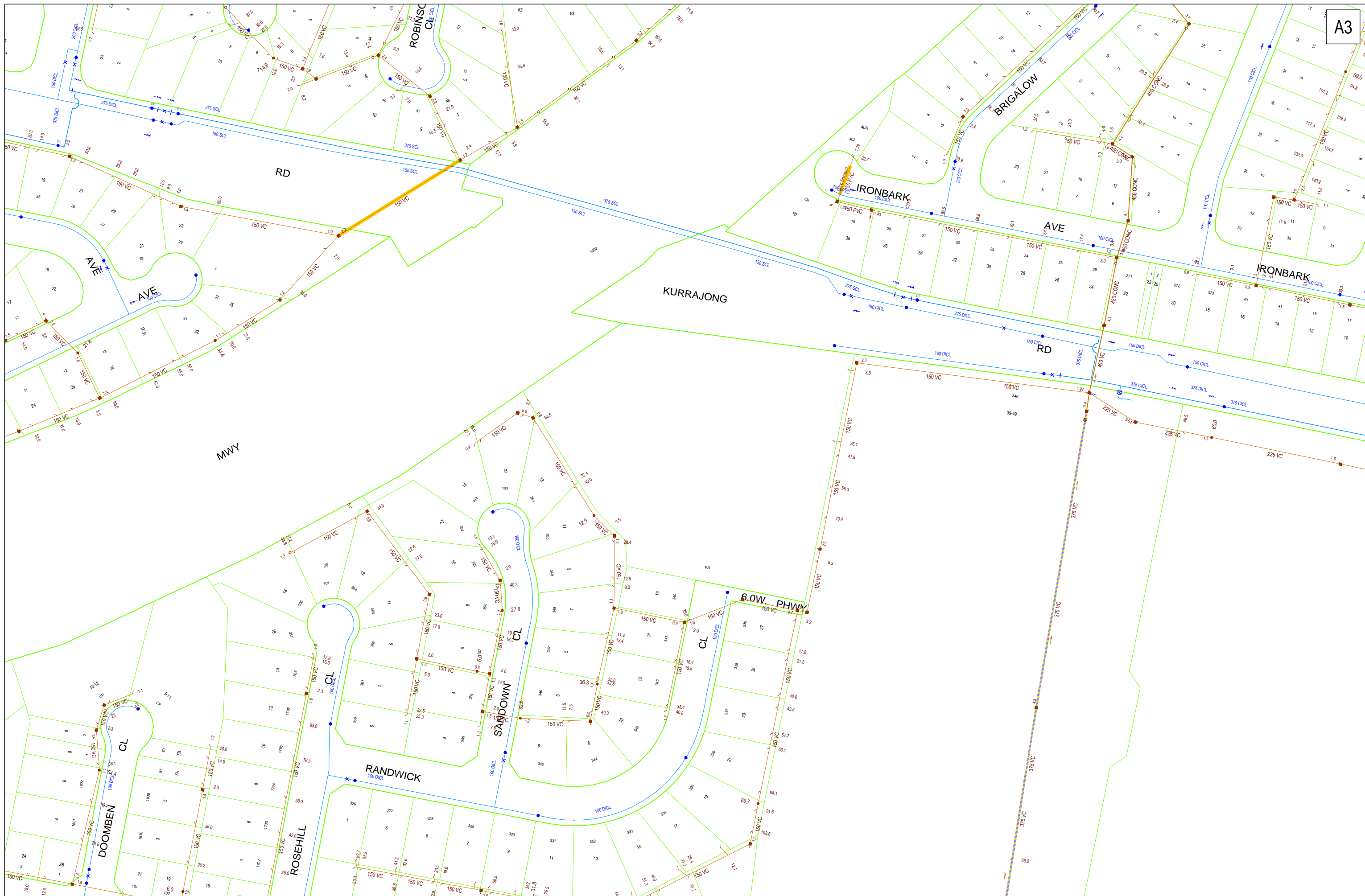
Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.

c31:M401-500
100DEAD
c31:M601-800
c37:M101-200
3010:LB-LE/1-36
3011:LD-LE/1-1:
CBN CABLE
1xP32 SUBDUC
IX 885 M01 DME

A horizontal scale bar with a black border. Above the bar, numerical labels are placed at 10m intervals: 0m, 10m, 20m, 30m, 40m, 50m, and 60m. The bar itself is divided into six equal segments by vertical black lines. The segments alternate in color: white, black, white, black, white, and black, starting from the left end at 0m.



Page 2 of 2

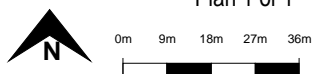


DBYD Address:
18 Randwick Close
Casula NSW 2170

DBYD Job No: 11408138
DBYD Sequence No: 56510217

Copyright Reserved Sydney Water 2016
No warranty is given that the information shown is complete or accurate.
SYDNEY WATER CORPORATION

Scale: 1:1500
Date of Production: 24/10/2016



Plan 1 of 1

Appendix G

Borehole Logs

Project ID: CES161003-HC
Client: Heymann Cohen Pty Ltd
Project: SummitCare, Randwick Close
Location: Casula



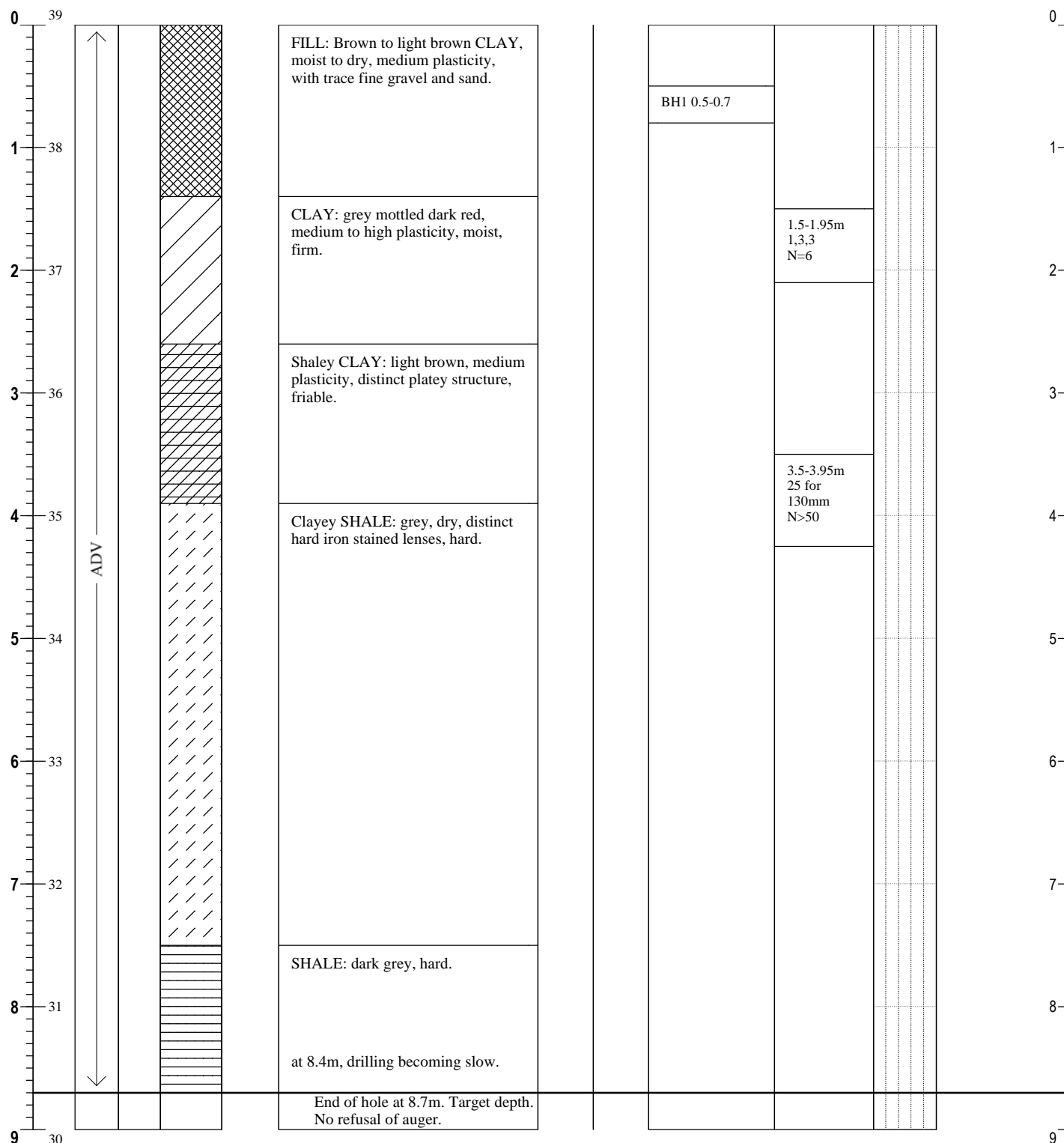
Suite 3, Level 1
55 Grandview Street, Pymble NSW 2073
PH: (02) 8569 2200 FAX: (02) 9983 0582
www.consultingearth.com.au

LOG ID:
BH1

Sheet: 1 of 1

X-Coord:	305666	Date Commenced:	3/11/16	Logged by:	MT
Y-Coord:	6241713	Date Completed:	3/11/16	Checked by:	DL
Surface Elevation (R.L) :	39	Hole Diameter (mm):	110		

Drilling Information				LITHOLOGY				Samples	Tests		Notes and additional observations	
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Sample ID	SPT		<div>100 200 300 400</div> Pocket Penetrometer (kPa)



Drill Company: SDI
Machine Type: Edson 100

Operator Name: Doug Miller

Refer to Standard Sheets
for details of abbreviations

Refer to Standard Sheets
for details of abbreviations

Location: Casula

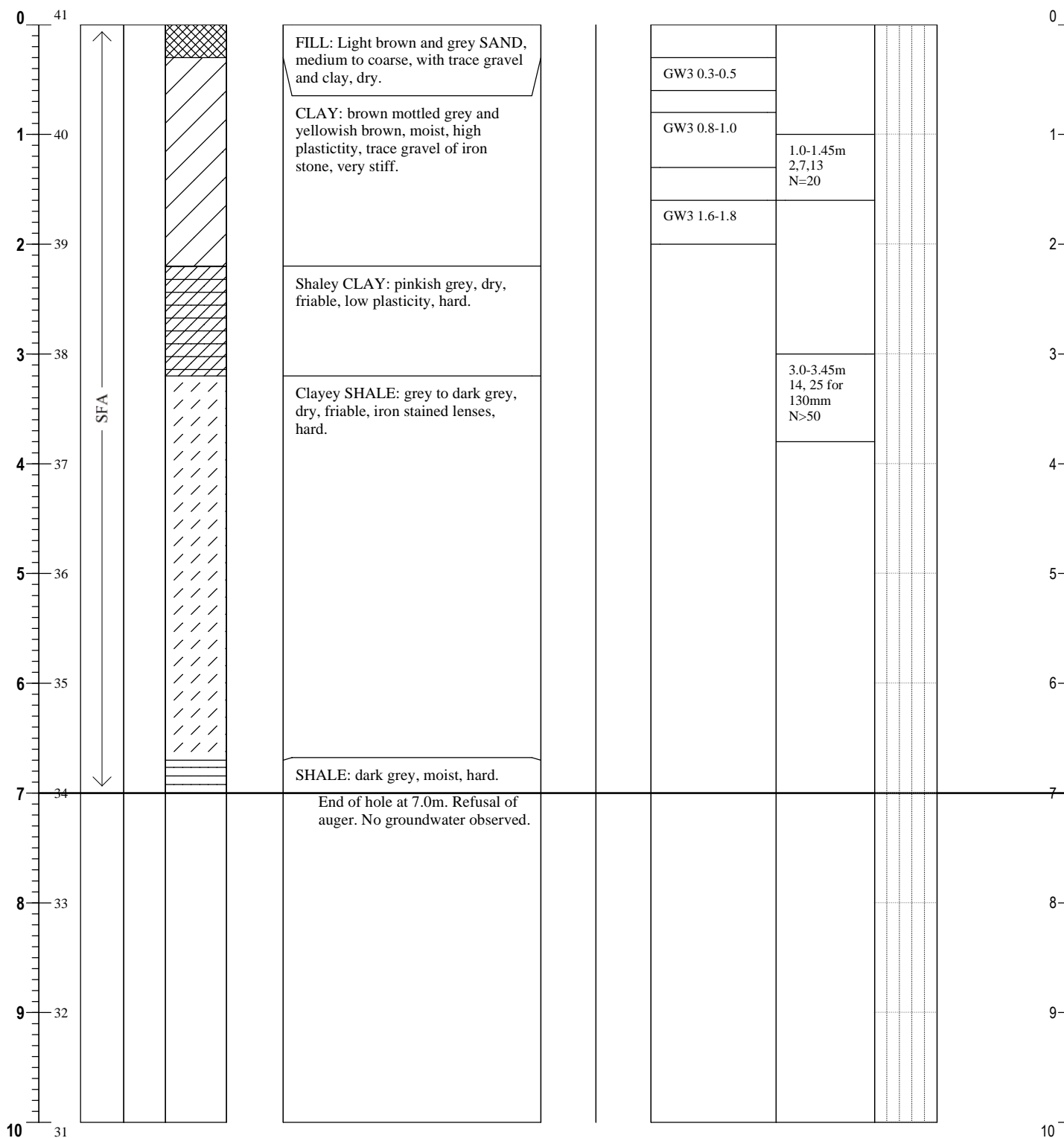


Sheet: 1 of 1

Checked by: DL

Hole Diameter (mm): 110

Drilling Information				LITHOLOGY				Samples	Tests		Notes and additional observations	
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Sample ID	SPT		<div>100 200 300 400</div> Pocket Penetrometer (kPa)



Machine Type: Edson 100

Doug Miller

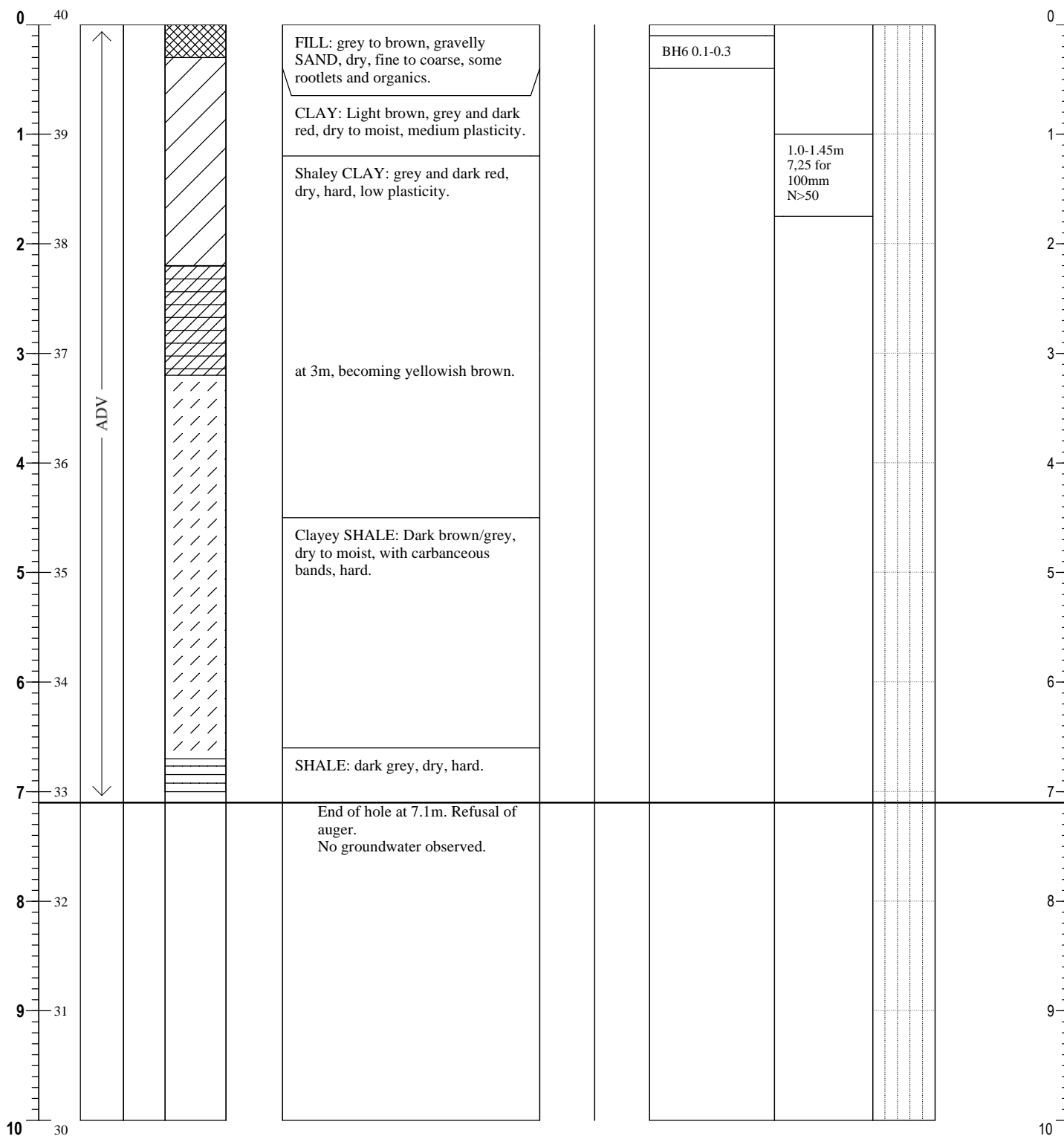
Refer to Standard Sheets
for details of abbreviations.

Casula

Sheet: 1 of 1

Hole Diameter (mm): 110

Drilling Information				LITHOLOGY				Samples	Tests	Notes and additional observations		
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component	Consistency / Density	Moisture	Sample ID		SPT	<div><div>100</div><div>200</div><div>300</div><div>400</div></div> Pocket Penetrometer (kPa)



for details of abbreviations.

X-Coord: 305631

Date Commenced: 2/11/16

Logged by: MT

Y-Coord: 6241722

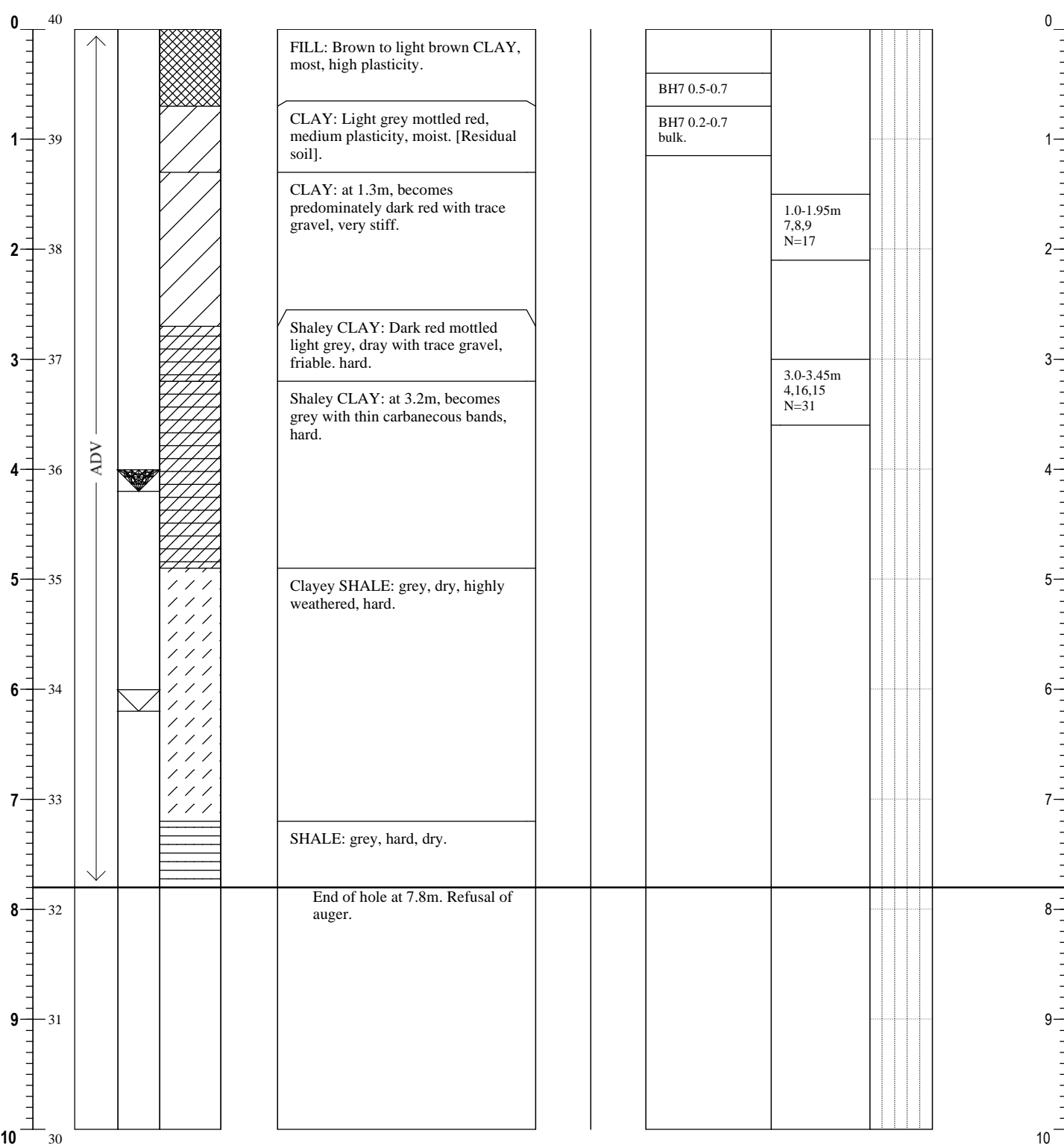
Date Completed: 2/11/16

Checked by: DL

Surface Elevation (R.L) : 40 m AHD

Hole Diameter (mm): 110

Drilling Information				LITHOLOGY				Samples	Tests		Notes and additional observations
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description	Consistency / Density	Moisture	Sample ID	SPT	
						SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor component					
											100 200 300 400



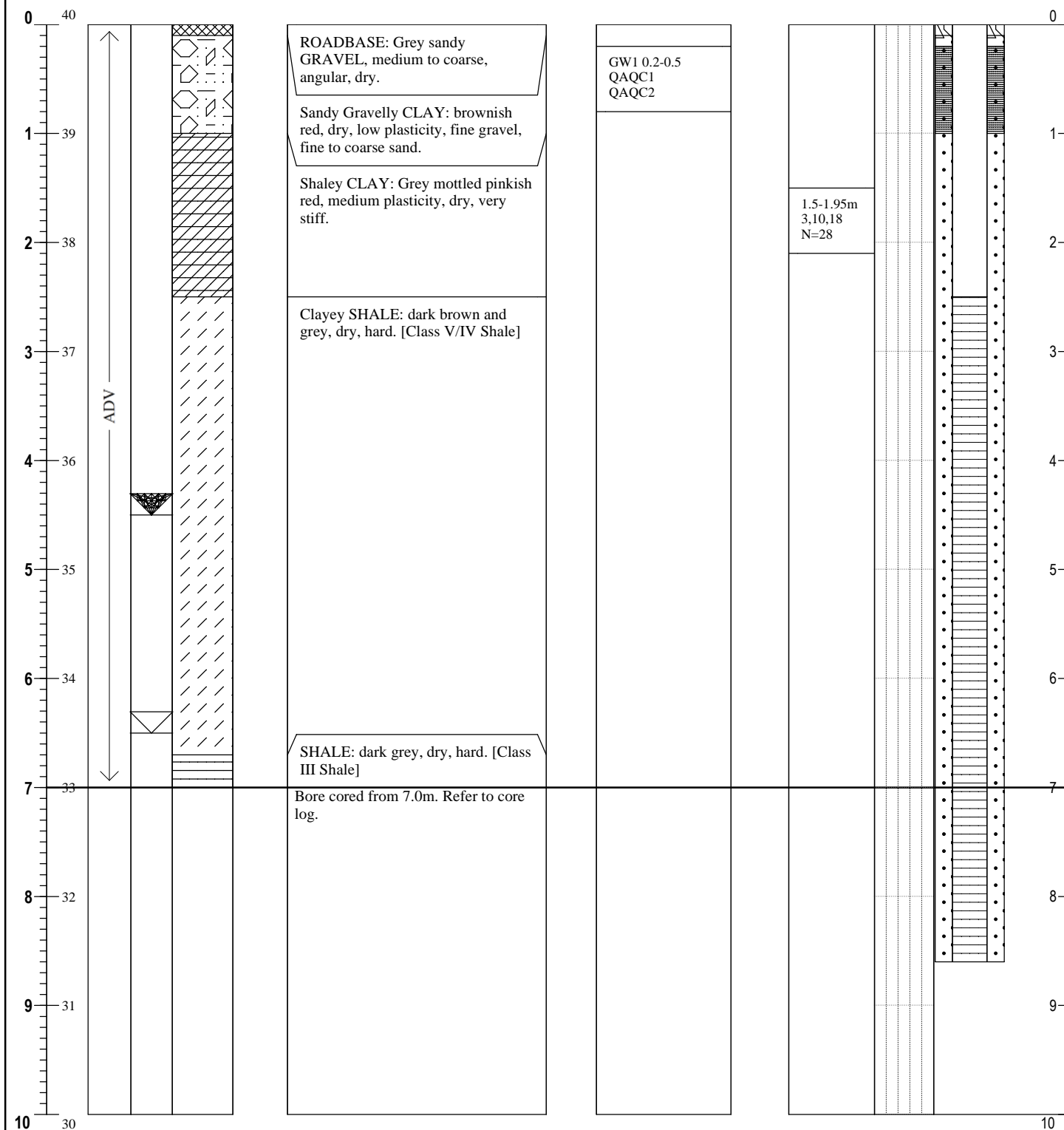
Project ID: CES161003-HC
Client: Heymann Cohen Pty Ltd
Project: SummitCare, Randwick Close
Location: Casula

LOG ID:
GW1

Sheet: 1 of 1

X-Coord: 305590 **GDA 94 MGA 56** **Date Commenced:** 3/11/16 **Logged by:** MT
Y-Coord: 6241727 **Date Completed:** 3/11/16 **Checked by:** DL
Surface Elevation (R.L.) : 40 m AHD **Hole Diameter (mm):** 110

Drilling Information				LITHOLOGY			Samples		Tests		Well Installation Detail
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description <small>SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor components</small>	Consistency / Density	Sample ID	Type	SPT	Pocket Penetrometer (kPa) <small>100 200 300 400</small>



Drill Company: SDI
Machine Type: Edson 100

Operator Name: Doug Miller
Operators Licence No.: -

Refer to Standard Sheets for details of abbreviations

Location: Casula



Corehole ID:
GW1

Sheet: 1 of 1

Checked by: DL

Hole Diameter (mm): 63mm

[illegible]











CONSULTING EARTH SCIENTISTS
RANDWICK CLOSE
CASULA

GW1 7.0 -8.6
NOV2016

Project ID: CES161003-HC
Client: Heymann Cohen Pty Ltd
Project: SummitCare, Randwick Close
Location: Casula

X-Coord: 305661	GDA 94 MGA 56	Date Commenced: 2/11/16	Logged by: MT
Y-Coord: 6241682		Date Completed: 2/11/16	Checked by: DL
Surface Elevation (R.L.) : 39 m AHD		Hole Diameter (mm): 110	

Drilling Information					LITHOLOGY			Samples		Tests		Well Installation Detail
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description	Consistency / Density	Sample ID	Type	SPT	Pocket Penetrometer (kPa)	
						SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor components					100 200 300 400	
0	39	ADV				ROADBASE: Greyish brown gravel/sand, dry, angular, medium to coarse grained.						0
1	38					FILL: brown CLAY with trace fine gravel, dry to moist, medium plasticity, stiff, organic odour.		GW2 0.4-0.6				1
2	37					CLAY: dark brownish red mottled grey, dry to moist, medium plasticity, stiff, with trace fine gravel. [Residual Soil]		GW2 1.7-1.9		1.5-1.95m 3,5,5 N=10		2
3	36					Clayey SHALE: brown mottled dark grey, dry, friable, hard. [Class V Shale].				3.0-3.45m 4,7,8 N=15		3
4	35					SHALE: highly to moderately weathered, dark grey. [Class IV Shale].				4.5m 25 for 125mm N>50		4
5	34					Borehole cored from 7.1m, Refer to core log.						5
6	33											6
7	32											7
8	31											8
9	30											9
10	29											10



Project ID: CES161003-HC
Client: Heymann Cohen Pty Ltd
Project: SummitCare, Randwick Close
Location: Casula

X-Coord: 305672	GDA 94 MGA 56	Date Commenced: 3/11/16	Logged by: MT
Y-Coord: 6241750		Date Completed: 3/11/16	Checked by: DL
Surface Elevation (R.L) : 39 m AHD		Hole Diameter (mm): 110	

Drilling Information				LITHOLOGY			Samples		Tests		Well Installation Detail
Depth (mBGL)	R.L. (m)	Method (Support)	Water	Symbol	USCS Symbol	Description	Consistency / Density	Sample ID	Type	SPT	
						SOIL TYPE: plasticity or particle characteristics colour, moisture, secondary and minor components					
										<div> <div>100</div> <div>200</div> <div>300</div> <div>400</div> </div> Pocket Penetrometer (kPa)	
0	39					FILL: Light brown and grey mottled black and dark red, with trace gravel, fine, high plasticity, moist.					0
1	38					FILL: Yellowish brown silty SAND, moist, fine to coarse, loose.		GW3 0.3-0.5			
						FILL: Light brown and grey mottled black and dark red CLAY, with trace gravel, fine, high plasticity, moist, firm.		GW3 0.8-1.0		1.0-1.45m 2,2,4 N=6	1
2	37					CLAY: Reddish brown mottled grey, high plasticity, moist, stiff. [Residual Soil]		GW3 1.6-1.8			2
3	36					Gravelly CLAY: Light brown mottled grey and dark brownish red, medium plasticity, dry, very stiff.				2.5-2.95m 6,7,8 N=15	3
4	35					Shaley CLAY: Grey to brown, medium plasticity, dry, trace fine gravel of ironstone and shale, distinct stucture.				4.0-4.45m 10,12,16 N=28	4
5	34										5
6	33										6
7	32					Bore cored from 7.0m. Refer to core log.					7
8	31										8
9	30										9
10	29										10

Location: Casula



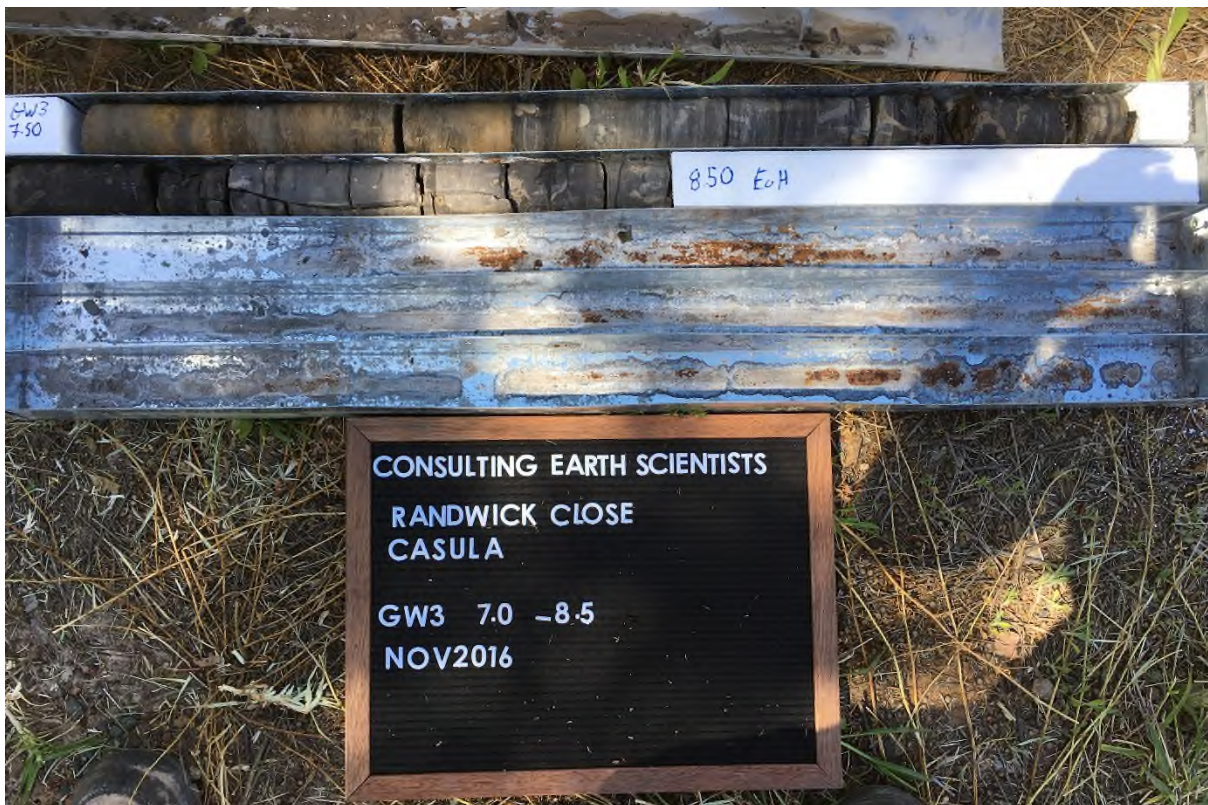
GW3

Sheet: 1 of 1

Checked by: DL

Hole Diameter (mm): 63mm

[illegible]



Appendix H

Laboratory Certificates



12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS

156683

Client:

Consulting Earth Scientists Pty Ltd

Suite 3, Level 1

55 Grandview Street

Pymble

NSW 2073

Attention: Miles Thompson

Sample log in details:

Your Reference:

CES163003-HC, 18 Randwick Close, Casula

No. of samples:

15 Soils

Date samples received / completed instructions received

03/11/16

/ 03/11/16

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:

10/11/16

/ 10/11/16

Date of Preliminary Report:

Not Issued

NATA accreditation number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing

Tests not covered by NATA are denoted with *.

Results Approved By:

David Springer
General Manager



Envirolab Reference: 156683

Revision No: R 00

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference	UNITS ----- -	156683-1 GW2	156683-3 BH1	156683-4 BH6	156683-5 BH7	156683-7 GW3
Depth	-----	0.4-0.6	0.5-0.7	0.1-0.3	0.5-0.7	0.3-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	111	120	117	111	109

vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference	UNITS ----- -	156683-10 BH3	156683-11 BH2	156683-12 QAQC1	156683-13 TB	156683-14 TS
Depth	-----	0.3-0.5	0.3-0.5	-	-	-
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016	07/11/2016
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	[NA]
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	[NA]
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	100%
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	85%
Ethylbenzene	mg/kg	<1	<1	<1	<1	96%
m+p-xylene	mg/kg	<2	<2	<2	<2	99%
o-Xylene	mg/kg	<1	<1	<1	<1	86%
naphthalene	mg/kg	<1	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	108	108	116	132	120

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	156683-15
Your Reference	-----	GW1
	-	
Depth	-----	0.2-0.5
Type of sample		Soil
Date extracted	-	04/11/2016
Date analysed	-	07/11/2016
TRHC ₆ - C ₉	mg/kg	<25
TRHC ₆ - C ₁₀	mg/kg	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	103

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	156683-1	156683-3	156683-4	156683-5	156683-7
Your Reference	-----	GW2	BH1	BH6	BH7	GW3
	-					
Depth	-----	0.4-0.6	0.5-0.7	0.1-0.3	0.5-0.7	0.3-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	05/11/2016	05/11/2016	05/11/2016	05/11/2016	05/11/2016
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	86	86	89	87	86

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	156683-10	156683-11	156683-12	156683-13	156683-15
Your Reference	-----	BH3	BH2	QAQC1	TB	GW1
	-					
Depth	-----	0.3-0.5	0.3-0.5	-	-	0.2-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	05/11/2016	05/11/2016	05/11/2016	05/11/2016	06/11/2016
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	87	85	85	88	84

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	156683-1 GW2	156683-3 BH1	156683-4 BH6	156683-5 BH7	156683-7 GW3
Depth Type of sample	----- Soil	0.4-0.6 Soil	0.5-0.7 Soil	0.1-0.3 Soil	0.5-0.7 Soil	0.3-0.5 Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE	0.19	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	88	83	85	89	83

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	156683-10 BH3	156683-11 BH2	156683-12 QAQC1	156683-15 GW1
Depth Type of sample	----- -	0.3-0.5 Soil	0.3-0.5 Soil	- Soil	0.2-0.5 Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	83	88	94	105

Organochlorine Pesticides in soil	UNITS	156683-1	156683-3	156683-4	156683-5	156683-7
Our Reference:	-----	GW2	BH1	BH6	BH7	GW3
Your Reference	-					
Depth	-----	0.4-0.6	0.5-0.7	0.1-0.3	0.5-0.7	0.3-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	108	108	117	113

Organochlorine Pesticides in soil				
Our Reference:	UNITS	156683-10	156683-11	156683-12
Your Reference	-----	BH3	BH2	QAQC1
	-			
Depth	-----	0.3-0.5	0.3-0.5	-
Type of sample		Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	111	112	107

Organophosphorus Pesticides	UNITS	156683-1	156683-3	156683-4	156683-5	156683-7
Our Reference:	-----	GW2	BH1	BH6	BH7	GW3
Your Reference	-					
Depth	-----	0.4-0.6	0.5-0.7	0.1-0.3	0.5-0.7	0.3-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	114	108	108	117	113

Organophosphorus Pesticides	UNITS	156683-10	156683-11	156683-12
Our Reference:	-----	BH3	BH2	QAQC1
Your Reference	-			
Depth	-----	0.3-0.5	0.3-0.5	-
Type of sample		Soil	Soil	Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Surrogate TCMX	%	111	112	107

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	156683-1 GW2	156683-3 BH1	156683-4 BH6	156683-5 BH7	156683-7 GW3
Depth Type of sample	----- -----	0.4-0.6 Soil	0.5-0.7 Soil	0.1-0.3 Soil	0.5-0.7 Soil	0.3-0.5 Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	114	108	108	117	113

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	156683-10 BH3	156683-11 BH2	156683-12 QAQC1
Depth Type of sample	----- -----	0.3-0.5 Soil	0.3-0.5 Soil	- Soil
Date extracted	-	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	111	112	107

Acid Extractable metals in soil	UNITS	156683-1	156683-3	156683-4	156683-5	156683-7
Our Reference:	-----	GW2	BH1	BH6	BH7	GW3
Your Reference	-					
Depth	-----	0.4-0.6	0.5-0.7	0.1-0.3	0.5-0.7	0.3-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	5	<4	<4	7	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	13	63	17	14
Copper	mg/kg	14	13	27	12	17
Lead	mg/kg	10	11	12	16	11
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	8	63	2	12
Zinc	mg/kg	17	31	49	10	14

Acid Extractable metals in soil	UNITS	156683-10	156683-11	156683-12	156683-15
Our Reference:	-----	BH3	BH2	QAQC1	GW1
Your Reference	-				
Depth	-----	0.3-0.5	0.3-0.5	-	0.2-0.5
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Date analysed	-	04/11/2016	04/11/2016	04/11/2016	04/11/2016
Arsenic	mg/kg	9	7	6	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	20	26	17
Copper	mg/kg	13	14	19	20
Lead	mg/kg	17	18	10	10
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	4	17	11
Zinc	mg/kg	17	19	18	17

Moisture Our Reference: Your Reference	UNITS ----- -	156683-1 GW2	156683-3 BH1	156683-4 BH6	156683-5 BH7	156683-7 GW3
Depth Type of sample	----- -	0.4-0.6 Soil	0.5-0.7 Soil	0.1-0.3 Soil	0.5-0.7 Soil	0.3-0.5 Soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	17	14	8.7	17	17

Moisture Our Reference: Your Reference	UNITS ----- -	156683-10 BH3	156683-11 BH2	156683-12 QAQC1	156683-15 GW1
Depth Type of sample	----- -	0.3-0.5 Soil	0.3-0.5 Soil	- Soil	0.2-0.5 Soil
Date prepared	-	4/11/2016	4/11/2016	4/11/2016	4/11/2016
Date analysed	-	7/11/2016	7/11/2016	7/11/2016	7/11/2016
Moisture	%	17	17	13	12

Asbestos ID - soils	UNITS	156683-1	156683-3	156683-4	156683-5	156683-7
Our Reference:	-----	GW2	BH1	BH6	BH7	GW3
Your Reference	-					
Depth	-----	0.4-0.6	0.5-0.7	0.1-0.3	0.5-0.7	0.3-0.5
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	9/11/2016	9/11/2016	9/11/2016	9/11/2016	9/11/2016
Sample mass tested	g	Approx 40g	Approx 45g	Approx 35g	Approx 35g	Approx 35g
Sample Description	-	Brown clayey soil	Brown clayey soil	Brown clayey soil	Brown clayey soil	Brown clayey soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils	UNITS	156683-10	156683-11	156683-12	156683-15
Our Reference:	-----	BH3	BH2	QAQC1	GW1
Your Reference	-				
Depth	-----	0.3-0.5	0.3-0.5	-	0.2-0.5
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	9/11/2016	9/11/2016	9/11/2016	9/11/2016
Sample mass tested	g	Approx 35g	Approx 35g	Approx 35g	Approx 30g
Sample Description	-	Brown clayey soil	Brown clayey soil	Brown clayey soil	Brown clayey soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

MethodID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

Client Reference: CES163003-HC, 18 Randwick Close, Casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Date analysed	-			07/11/2016	156683-1	07/11/2016 07/11/2016	LCS-8	07/11/2016
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	156683-1	<25 <25	LCS-8	113%
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	156683-1	<25 <25	LCS-8	113%
Benzene	mg/kg	0.2	Org-016	<0.2	156683-1	<0.2 <0.2	LCS-8	102%
Toluene	mg/kg	0.5	Org-016	<0.5	156683-1	<0.5 <0.5	LCS-8	111%
Ethylbenzene	mg/kg	1	Org-016	<1	156683-1	<1 <1	LCS-8	116%
m+p-xylene	mg/kg	2	Org-016	<2	156683-1	<2 <2	LCS-8	119%
o-Xylene	mg/kg	1	Org-016	<1	156683-1	<1 <1	LCS-8	122%
naphthalene	mg/kg	1	Org-014	<1	156683-1	<1 <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	121	156683-1	111 111 RPD: 0	LCS-8	120%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Date analysed	-			06/11/2016	156683-1	05/11/2016 05/11/2016	LCS-8	06/11/2016
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	156683-1	<50 <50	LCS-8	97%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	156683-1	<100 <100	LCS-8	88%
TRHC ₂₈ - C ₃₆	mg/kg	100	Org-003	<100	156683-1	<100 <100	LCS-8	100%
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	156683-1	<50 <50	LCS-8	97%
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	156683-1	<100 <100	LCS-8	88%
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	156683-1	<100 <100	LCS-8	100%
Surrogate o-Terphenyl	%		Org-003	90	156683-1	86 87 RPD: 1	LCS-8	92%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Date analysed	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	LCS-8	102%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	LCS-8	98%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	LCS-8	95%
Anthracene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	LCS-8	85%
Pyrene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	LCS-8	86%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	156683-1	<0.2 <0.2	[NR]	[NR]

Client Reference: CES163003-HC, 18 Randwick Close, Casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	156683-1	<0.05 <0.05	LCS-8	87%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	99	156683-1	88 86 RPD: 2	LCS-8	116%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Date analysed	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
HCB	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	86%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	101%
Heptachlor	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	103%
delta-BHC	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	103%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	101%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	101%
Dieldrin	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	108%
Endrin	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	116%
pp-DDD	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	107%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	LCS-8	101%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	124	156683-1	114 115 RPD: 1	LCS-8	121%

Client Reference: CES163003-HC, 18 Randwick Close, Casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Date analysed	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	95%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	94%
Dimethoate	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	100%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	109%
Malathion	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	118%
Parathion	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	106%
Ronnel	mg/kg	0.1	Org-008	<0.1	156683-1	<0.1 <0.1	LCS-8	106%
Surrogate TCMX	%		Org-008	124	156683-1	114 115 RPD: 1	LCS-8	111%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Date analysed	-			04/11/2016	156683-1	04/11/2016 04/11/2016	LCS-8	04/11/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	LCS-8	101%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	156683-1	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	124	156683-1	114 115 RPD: 1	LCS-8	111%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	
Acid Extractable metals in soil						Base Duplicate %RPD	
Date prepared	-			04/11/2016	156683-1	04/11/2016 04/11/2016	
Date analysed	-			04/11/2016	156683-1	04/11/2016 04/11/2016	
Arsenic	mg/kg	4	Metals-020	<4	156683-1	5 7 RPD: 33	
Cadmium	mg/kg	0.4	Metals-020	<0.4	156683-1	<0.4 <0.4	
Chromium	mg/kg	1	Metals-020	<1	156683-1	11 13 RPD: 17	
Copper	mg/kg	1	Metals-020	<1	156683-1	14 16 RPD: 13	
Lead	mg/kg	1	Metals-020	<1	156683-1	10 12 RPD: 18	
Mercury	mg/kg	0.1	Metals-021	<0.1	156683-1	<0.1 <0.1	
Nickel	mg/kg	1	Metals-020	<1	156683-1	5 8 RPD: 46	
Zinc	mg/kg	1	Metals-020	<1	156683-1	17 18 RPD: 6	
QUALITYCONTROL	UNITS	Dup. Sm#		Duplicate		Spike Sm#	Spike % Recovery
Acid Extractable metals in soil				Base + Duplicate + %RPD			
Date prepared	-	[NT]		[NT]		LCS-7	04/11/2016
Date analysed	-	[NT]		[NT]		LCS-7	04/11/2016
Arsenic	mg/kg	[NT]		[NT]		LCS-7	112%
Cadmium	mg/kg	[NT]		[NT]		LCS-7	103%
Chromium	mg/kg	[NT]		[NT]		LCS-7	111%
Copper	mg/kg	[NT]		[NT]		LCS-7	104%
Lead	mg/kg	[NT]		[NT]		LCS-7	106%
Mercury	mg/kg	[NT]		[NT]		LCS-7	72%
Nickel	mg/kg	[NT]		[NT]		LCS-7	103%
Zinc	mg/kg	[NT]		[NT]		LCS-7	105%

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Note: Samples for asbestos testing were sub-sampled from jars provided by the client.

Asbestos ID was analysed by Approved Identifier: Paul Ching

Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test

NR: Test not required

<: Less than

PQL: Practical Quantitation Limit

RPD: Relative Percent Difference

>: Greater than

NT: Not tested

NA: Test not required

LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.



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Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS

156717

Client:

Consulting Earth Scientists Pty Ltd

Suite 3, Level 1
55 Grandview Street
Pymble
NSW 2073

Attention: M Thompson

Sample log in details:

Your Reference:

18 Randwick close, casula

No. of samples:

4 soils

Date samples received / completed instructions received 04/11/2016 / 04/11/2016

This report replaces the R00 due to changes in project's ID as client's request.

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:

11/11/16 / 11/11/16

Date of Preliminary Report:

Not Issued

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Accredited for compliance with ISO/IEC 17025 - Testing

Tests not covered by NATA are denoted with *.

Results Approved By:

David Springer
General Manager



vTRH(C6-C10)/BTEXN in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- - -----	156717-1 BH4 0.3-0.5 4/11/2016 soil	156717-2 BH5 0.4-0.6 4/11/2016 soil	156717-3 TB - 4/11/2016 soil	156717-4 TS - 4/11/2016 soil
Date extracted	-	07/11/2016	07/11/2016	07/11/2016	07/11/2016
Date analysed	-	10/11/2016	10/11/2016	10/11/2016	10/11/2016
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	[NA]
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	[NA]
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	[NA]	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	95%
Toluene	mg/kg	<0.5	<0.5	<0.5	98%
Ethylbenzene	mg/kg	<1	<1	<1	108%
m+p-xylene	mg/kg	<2	<2	<2	108%
o-Xylene	mg/kg	<1	<1	<1	111%
naphthalene	mg/kg	<1	<1	[NA]	[NA]
Surrogate aaa-Trifluorotoluene	%	91	87	92	75

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	156717-1	156717-2
Your Reference	-----	BH4	BH5
	-		
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date extracted	-	07/11/2016	07/11/2016
Date analysed	-	08/11/2016	08/11/2016
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100
Surrogate o-Terphenyl	%	84	86

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	156717-1 BH4	156717-2 BH5
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date extracted	-	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE
Surrogate <i>p</i> -Terphenyl-d14	%	98	100

Organochlorine Pesticides in soil			
Our Reference:	UNITS	156717-1	156717-2
Your Reference	-----	BH4	BH5
	-		
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date extracted	-	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016
HCB	mg/kg	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1
Surrogate TCMX	%	95	97

Organophosphorus Pesticides			
Our Reference:	UNITS	156717-1	156717-2
Your Reference	-----	BH4	BH5
	-		
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date extracted	-	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1
Surrogate TCMX	%	95	97

PCBs in Soil			
Our Reference:	UNITS	156717-1	156717-2
Your Reference	-----	BH4	BH5
	-		
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date extracted	-	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016
Aroclor 1016	mg/kg	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1
Surrogate TCLMX	%	95	97

Acid Extractable metals in soil			
Our Reference:	UNITS	156717-1	156717-2
Your Reference	-----	BH4	BH5
	-		
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date prepared	-	07/11/2016	07/11/2016
Date analysed	-	07/11/2016	07/11/2016
Arsenic	mg/kg	9	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	19	7
Copper	mg/kg	23	12
Lead	mg/kg	19	8
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	12	2
Zinc	mg/kg	38	12

Moisture Our Reference: Your Reference	UNITS ----- -	156717-1 BH4	156717-2 BH5	156717-3 TB
Depth Date Sampled Type of sample	----- - 4/11/2016 soil	0.3-0.5 4/11/2016 soil	0.4-0.6 4/11/2016 soil	- 4/11/2016 soil
Date prepared	-	7/11/2016	7/11/2016	7/11/2016
Date analysed	-	8/11/2016	8/11/2016	8/11/2016
Moisture	%	16	17	1.9

Asbestos ID - soils			
Our Reference:	UNITS	156717-1	156717-2
Your Reference	-----	BH4	BH5
	-		
Depth	-----	0.3-0.5	0.4-0.6
Date Sampled		4/11/2016	4/11/2016
Type of sample		soil	soil
Date analysed	-	10/11/2016	10/11/2016
Sample mass tested	g	Approx. 35g	Approx. 35g
Sample Description	-	Red coarse-grained soil & rocks	Beige coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
		Organic fibres detected	Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

MethodID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

Client Reference: 18 Randwick close, casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Date analysed	-			10/11/2016	[NT]	[NT]	LCS-7	10/11/2016
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-7	102%
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-7	102%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-7	92%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-7	96%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-7	102%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-7	110%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-7	108%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	94	[NT]	[NT]	LCS-7	92%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/11/2016	[NT]	[NT]	LCS-6	07/11/2016
Date analysed	-			07/11/2016	[NT]	[NT]	LCS-6	07/11/2016
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-6	95%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-6	92%
TRHC ₂₈ - C ₃₆	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-6	110%
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-6	95%
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-6	92%
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-6	110%
Surrogate o-Terphenyl	%		Org-003	79	[NT]	[NT]	LCS-6	84%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Date analysed	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-7	96%
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-7	92%
Phenanthrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-7	89%
Anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-7	82%
Pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	LCS-7	85%
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	[NT]	[NT]	[NR]	[NR]

Client Reference: 18 Randwick close, casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	[NT]	[NT]	LCS-7	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	99	[NT]	[NT]	LCS-7	120%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Date analysed	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
HCB	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	95%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	81%
Heptachlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	75%
delta-BHC	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	83%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	81%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	84%
Dieldrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	87%
Endrin	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	70%
pp-DDD	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	85%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	LCS-7	71%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	94	[NT]	[NT]	LCS-7	116%

Client Reference: 18 Randwick close, casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Date analysed	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	81%
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Diazinon	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	108%
Dimethoate	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	74%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	93%
Malathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	86%
Parathion	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	91%
Ronnel	mg/kg	0.1	Org-008	<0.1	[NT]	[NT]	LCS-7	93%
Surrogate TCMX	%		Org-008	94	[NT]	[NT]	LCS-7	96%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Date analysed	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	LCS-7	102%
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	94	[NT]	[NT]	LCS-7	96%

Client Reference: 18 Randwick close, casula

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date prepared	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Date analysed	-			07/11/2016	[NT]	[NT]	LCS-7	07/11/2016
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	LCS-7	114%
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	LCS-7	106%
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-7	110%
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-7	109%
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-7	106%
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	LCS-7	90%
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-7	102%
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-7	109%

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Note: Samples 156717-1, 2 were sub-sampled from jars provided by the client.

Asbestos ID was analysed by Approved Identifier: Paul Ching

Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test

NR: Test not required

<: Less than

PQL: Practical Quantitation Limit

RPD: Relative Percent Difference

>: Greater than

NT: Not tested

NA: Test not required

LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

CERTIFICATE OF ANALYSIS

Work Order	: ES1625137	Page	: 1 of 7
Amendment	: 1		
Client	: CONSULTING EARTH SCIENTISTS	Laboratory	: Environmental Division Sydney
Contact	: Mr Miles Thompson	Contact	: Customer Services ES
Address	: Suite 3, Level 1 55-65 Grandview Street PYMBLE NSW, AUSTRALIA 2073	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 8569 2200	Telephone	: +61-2-8784 8555
Project	: 18 Randwick CI, Casula	Date Samples Received	: 04-Nov-2016 16:05
Order number	: CES161003-HC	Date Analysis Commenced	: 07-Nov-2016
C-O-C number	: ----	Issue Date	: 10-Nov-2016 15:48
Sampler	: M.T.		
Site	: 18 Randwick CI, Casula		
Quote number	: ----		
No. of samples received	: 1		
No. of samples analysed	: 1		



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Christopher Owler	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QAQC2	----	----	----	----
Client sampling date / time				[03-Nov-2016]	----	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1625137-001	-----	-----	-----	-----	-----
Result				----	----	----	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%	12.5	----	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----	----
Asbestos Type	1332-21-4	-	--	-	----	----	----	----	----
Sample weight (dry)	----	0.01	g	16.8	----	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	C.OWLER	----	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg	10	----	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----	----
Chromium	7440-47-3	2	mg/kg	9	----	----	----	----	----
Copper	7440-50-8	5	mg/kg	20	----	----	----	----	----
Lead	7439-92-1	5	mg/kg	10	----	----	----	----	----
Nickel	7440-02-0	2	mg/kg	2	----	----	----	----	----
Zinc	7440-66-6	5	mg/kg	12	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Client sample ID

				QAQC2	----	----	----	----
Client sampling date / time				[03-Nov-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1625137-001	-----	-----	-----	-----
				Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QAQC2	----	----	----	----
Client sampling date / time				[03-Nov-2016]	----	----	----	----	
Compound	CAS Number	LOR	Unit	ES1625137-001	-----	-----	-----	-----	
				Result	----	----	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----	
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----	
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----	
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----	
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	----	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----	
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----	
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----	
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----	
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----	
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----	
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----	
EP080: BTEXN									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QAQC2	----	----	----	----
Client sampling date / time					[03-Nov-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1625137-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP080: BTEXN - Continued									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		91.2	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		109	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		87.0	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		103	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		96.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		93.3	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		94.9	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		112	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		88.1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		77.0	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		89.4	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		103	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: SOIL		
Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	QAQC2 - [03-Nov-2016]	Pale brown sandy soil



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130